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# LANDSCAPE MANAGEMENT

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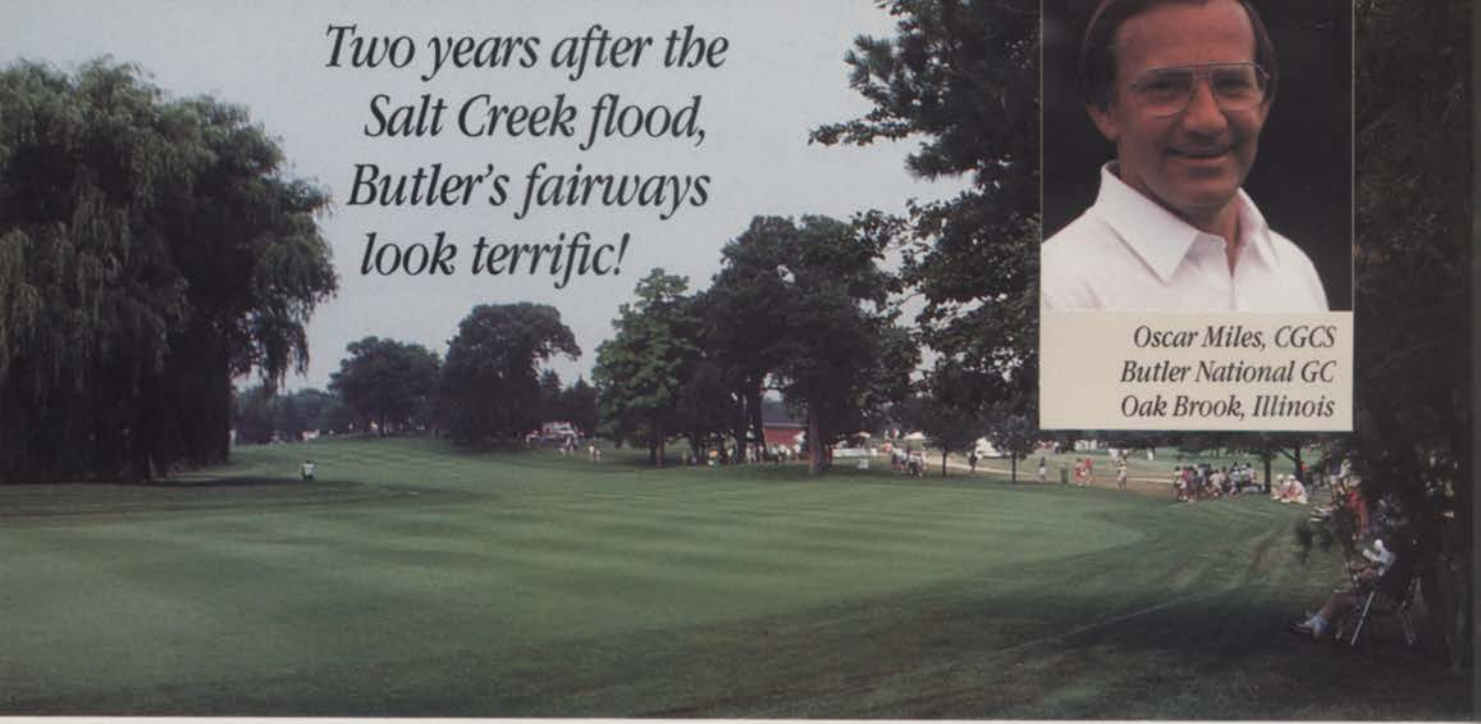
# WINTERIZING EQUIPMENT






*Oscar Miles, CGCS*
*Butler National GC*
*Oak Brook, Illinois*

*Seventh fairway during the Western Open, 1989.*

# Penneagle and Oscar Miles make Butler National GC 'picture perfect' again!

"Before the 1987 Western Open, Butler National was primped and trimmed to perfection for its date with the pros and television cameras" says Oscar Miles, "then 9½ inches of rain drenched the course. The resulting flood deposited tons of silt that dried and destroyed the grass beneath.

"After the cleanup that required thousands of manhours, high pressure hoses, squeeges and helicopters for drying; the process of reseeding began.

"Based on Penneagle's excellent performance before the flood, I chose to reseed with this bentgrass. After two years, the new stand appears better than before. With our time-proven maintenance program, we mow our fairways at 7/16" and have a good working layer of Penneagle with virtually no thatch.

*After two years, Penneagle produces a good working layer with no thatch buildup.*

"In preparing for the 1989 Western Open, we compared the course to a Van Gogh painting, and the crew's efforts were to enhance the work of art by meticulous touchup on the frame. The result was a 'picture perfect' course that caused the players and announcers to rave.

"Now if I could only get the announcers and writers to call 'Penneagle' by name ... you can't plant *just any* bentgrass and expect it to perform like Penneagle."

*Seventh fairway before the rain delayed 1987 Western Open.*

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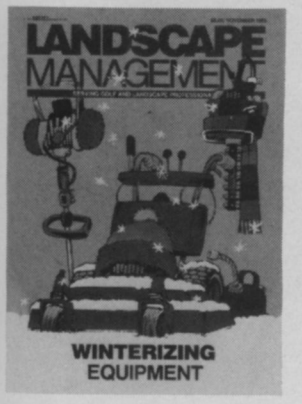
NOVEMBER 1989, VOLUME 29, NUMBER 11

# LANDSCAPE MANAGEMENT

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by Larry Kassell

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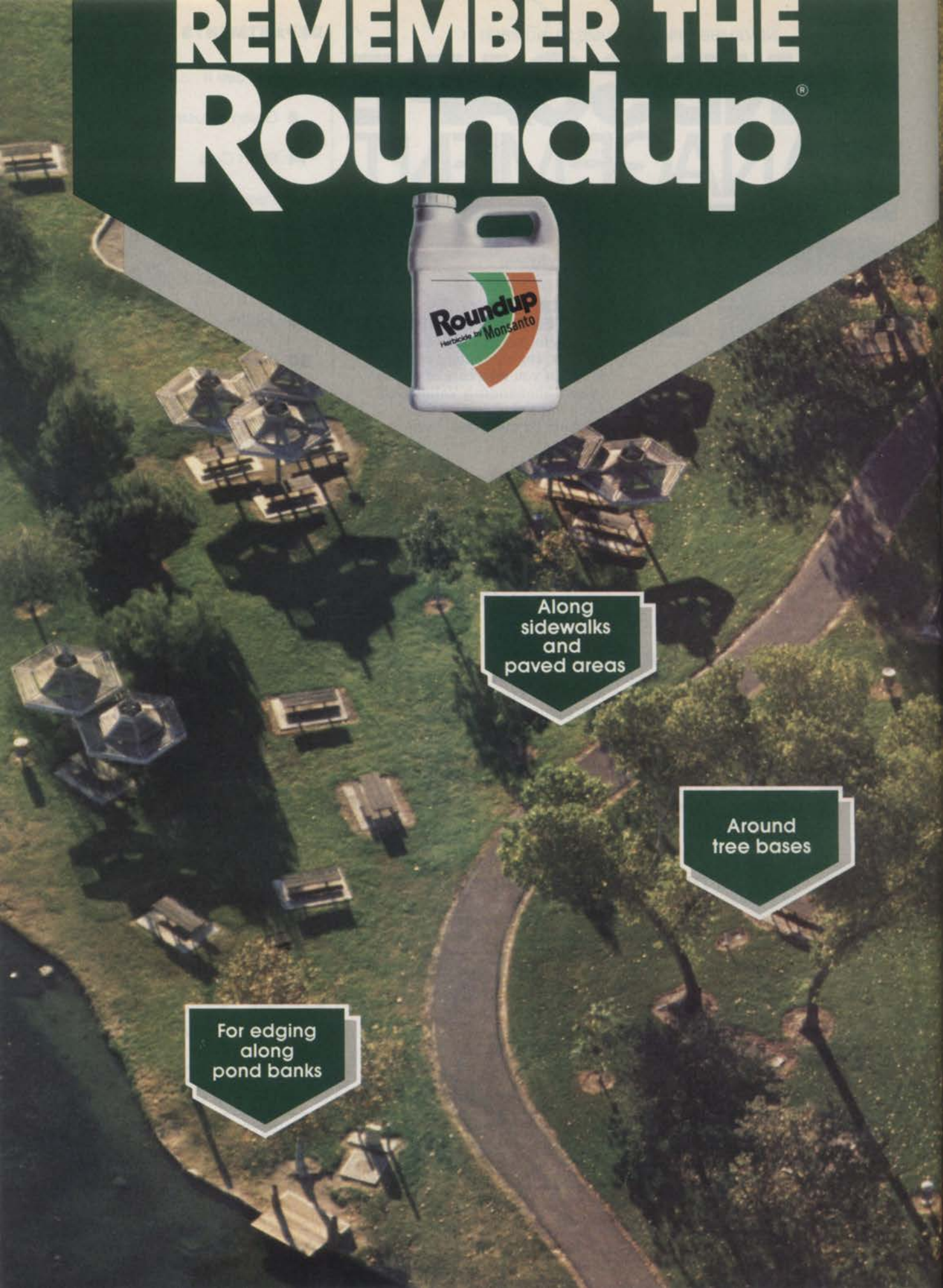
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# How much of my money do you want?

What would you say if I told you that I would be willing to pay you more than you want to be paid? You'd jump at the chance, right?

Green Industry, you're not jumping. Not yet, anyway.

If I were Mr. Middle Income, my household would be pulling down a tidy annual sum, even though both my wife and I would have to hold down separate jobs. And, because of those demands, we'd have little time to spend with each other and with the kids. So we'd be looking for shortcuts in our day-to-day lives.

We'd hire a "domestic engineer" to vacuum every week. We'd have the local pizza joint deliver dinner once or twice a week. When the carpets got dirty or we detected the presence of an abominable insect somewhere inside our beloved walls, we'd call the appropriate specialists.

We'd maintain this philosophy so we could spend evenings, Saturdays, Sundays and holidays as a family. We'd play "Trivial Pursuit" after dinner; we'd watch "Indiana Jones" movies together; we'd take weekend excursions, especially during the summer.

And do you know what? We might not even realize what we'd be paying our lawn specialists. Whatever it was, we'd think, it was certainly worth it. Our lawn would be neat, trim, devoid of weeds—the envy of our neighbors. And all we'd have to worry about would be turning the sprinklers off and on.

Well, friends, many of your own customers are Mr. (or Ms.) Middle Incomes. They're people you're mighty interested in keeping. And how do you do that?

Number one, most important of all: you're going to have to pay your employees better wages because they're your direct pipeline to those valued customers. We're talking pretty hefty raises, too, for basically unskilled labor.

And, upon hearing this nasty bit of news, the first thing you say to yourself is, "I can't afford it!"

But you *can*. You *can* afford to compete with the McDonalds' of the world for that unskilled labor. You *can* afford to pay your line-level help $10 or $15 an hour.

Do you know why? Because of all the Mr. and Ms. Middle Incomes out there. People who value their time more than their money, to a point. (Don't let your costs climb over what a second income might be able to afford.)

Here's the real secret. Pay your employees more *now*, before you lose the good ones to competitors; pay them *now*, before the personnel crunch hits the industry. You can either horde the good ones now, or wait in line three years from now.

All you have to do is ask your customers for a little more money.

Jerry Roche

**Jerry Roche, executive editor**


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| Improved hard fescue | **Aurora** |
| Improved Chewings fescue | **Shadow** |
| Improved Sheeps fescue | **Bighorn** |
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# Finally, A High Ca Doesn't Handle L

For too long, high-capacity mowers have left a lot to be desired. But now all that has changed. Presenting the revolutionary new Groundsmaster® 580-D with an 80 hp turbo-diesel engine. The first large-scale rotary mower that combines the productivity of a 16-foot machine with the handling ease of a smaller mower.

Operating the 580-D is incredibly easy. Only Toro provides an adjustable tilt steering wheel and column. All controls are at the operator's fingertips, even cruise control.

Transport is easy too. An exclusive rotating hinge lowers the outboard cutting units behind the operator for a clear view to the side and rear. A balanced design allows you a stable 20 mph transport speed because the weight of the outboard cutting units is rotated to the rear.

Digital readouts display vital engine/machine functions at the touch of a button.

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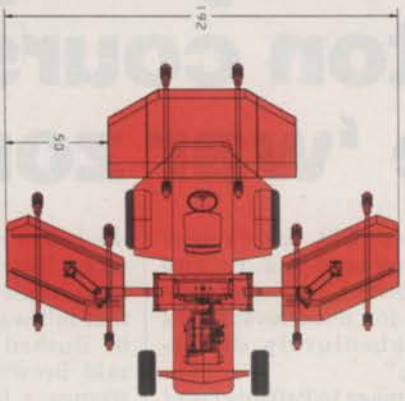
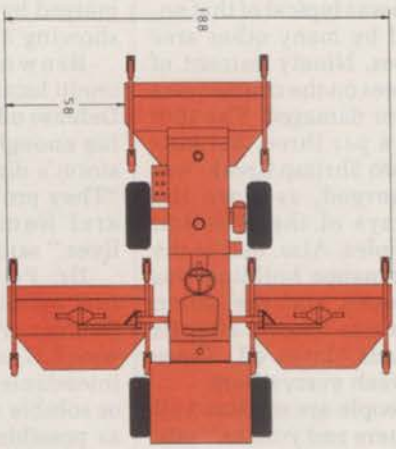
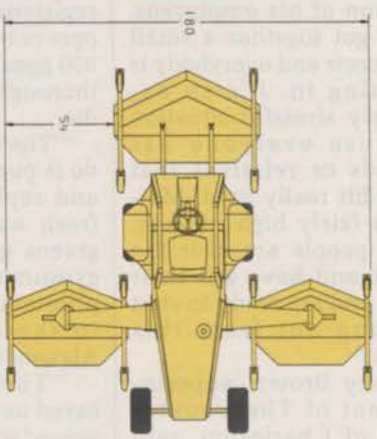
# pacity Mower That ike A School Bus.

Toro's outboard cutting units also include an exclusive break-away protection feature. Should the operator misjudge distance, the wings will pivot away from the object that has been hit.

Another Toro exclusive allows you to raise one or both of the outboard cutting units inside the traction unit width. The 580-D can then trim between objects less than 8 feet apart with the 92" Triflex® cutting unit.




The 580-D's wide stance and short wheelbase give it maneuverability and stability. A short 76" wheelbase lets you turn an 18" uncut circle without braking. And Toro's exclusive swept-forward wing design keeps the tips of the outboard cutting units in line with the front drive wheels improving operator control and visibility.

For even more versatility, the 580-D includes these accessories: an 8-foot front broom attachment, a roll over protection system, a canopy, a cab and a road light package.

If you've been sacrificing ease of operation for high capacity, it's time you saw the revolutionary machine that gives you both: the new Groundsmaster 580-D from Toro. Call your local Toro distributor to see the Groundsmaster 580-D or contact Toro at the address below. You'll see firsthand how productive and versatile large-scale turf mowing can be.

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GREEN INDUSTRY NEWS

NOVEMBER 1989, VOLUME 29, NUMBER 11

LANDSCAPE MANAGEMENT

GOLF

# After visit by Hugo, Charleston courses look like 'war zone'

CHARLESTON, S.C. — A week after Hurricane Hugo tore into the South Carolina coast, golf course superintendents expressed awe over its destructive power, and thanks that the death and damage toll was not what it could have been.

Up to 90 percent of the trees were gone on many South Carolina courses. Salt water intrusion, downed power and telephone lines, damaged or destroyed buildings and courses strewn with debris were the major problems faced by superintendents.

The courses that sustained the most damage are those within a 75-mile radius of Charleston Harbor, especially those on the neighboring islands to the north. The Sept. 21 storm slammed into South Carolina there and moved inland to Columbia, where it turned north toward Charlotte, N.C. It left behind a wide swath of destruction that may cost $3 billion to repair.

"It looks like a war zone," said Tom Cannon, superintendent of Patriots Points Links, an 18-hole, 7,100-yard public course right on Charleston Harbor. "I was in the Vietnam War and I've seen a lot of devastation there. I've also had a couple of brushes with hurricanes. But the damage that was done to the Charleston area was awesome and unbelievable. It's just absolutely devastating."

Damage to Patriots Point Links was typical of that endured by many other area courses. Ninety percent of the trees on the course were gone or damaged. The 16th hole, a par three that jutts out into Shrimp Creek, was submerged, as were the fairways of the 17th and 18th holes. Also, half of the maintenance building was destroyed and the pump house was flooded after its roof was blown off. There was trash everywhere.

"People are scattered all over here and yonder," said Cannon of his employees. "I've got together a small base crew and everybody is pitching in. It's an extremely stressful situation because everyone has friends or relatives that were hit really hard. Morale is fairly high, though. Most people are over the shock and have grit their teeth and are ready to start digging out from this storm."

Tony Brown, superintendent of The Country Club of Charleston, said that his course may have been spared severe saltwater damage because of the heavy rains before and after Hugo. "There has been ample opportunity for that salt water to run off or be flushed into the soil," said Brown. "It's kind of strange; a lot of areas submerged by salt water aren't showing a lot of damage."

Brown and Cannon credit local media and Civil Defense officials for providing enough warning of the storm's direction and fury. "They probably saved several hundred thousand lives," said Brown.

Dr. Paul Alexander, a turf specialist at Horry-Georgetown Tech in Conway, S.C., urged area superintendents to run a salinity or soluble salts test as soon as possible. Bermudagrass registering more than 1,500 ppm or bentgrass more than 950 ppm need to be flushed thoroughly or the grass will die.

"The only thing you can do is pump those areas out and replenish them with fresh water. On tees and greens get out there with gypsum and make that application to tie up the salts in the soil," observed Alexander.

"The big thing that saved us was that the storm moved so rapidly we didn't get the anticipated rainfall of 10 to 15 inches."

Dr. Tim Bowyer of Southern Turf Nurseries sent a letter to superintendents. "Salts may be leached from the profile through the application of gypsum," he wrote. "Regular ag gypsum can be applied at the rate of 1-2 tons per acre. This will provide little negative effect on soil pH while at the same time freeing sodium from the sodium profile and replacing it with calcium."

The president of Car-

**Numerous evergreen trees like these at the Oaks Plantation Athletic & Country Club were sheared off at mid-trunk by the damaging winds of Hurricane Hugo.**

olinas GCSA, Randy Allen of Dunes Golf & Beach Club in Myrtle Beach, said his area escaped serious damage. Still, his 35-acre irrigation lake showed salt intrusion of 9,500 ppm, and more than 300 trees were lost, many large oaks.

"When I rode around our golf course I just thought, 'Good Lord, I just can't believe all this happened,'" Allen added. "But when I look at the footage of Garden City and other places that were totally destroyed, I feel fortunate. I had never lived through a storm of that magnitude and hopefully I won't have to again."

—*Will Perry*□

## *An eyewitness to weather history*

CHARLESTON, S.C. — *"I completely underestimated that storm. I will never do it again. My wife and I decided to ride out the storm in our home. Like I said, I was in full combat in Vietnam and it was as bad or worse than that.*

*"We could hear the wind starting to scream, so we went into a hallway in the middle of the house. The wind just kept picking up and picking up until you couldn't even hear yourself talk. The wind started to buck the house...I felt several times that the wind was going to pick up my house and flip it.*

*"We laid there like that for an hour and a half. The power was off, all the radio stations were off; there were no lights or TV. We were afraid to move. I mean we were just laying there listening to the house shake.*

*"Then it was the eeriest thing. The eye came over the area and just as fast as those winds picked up they quit. They just stopped. There was no wind. It was hot, balmy and humid. I opened the front door and saw my neighbor up on his roof trying to patch a hole made when a tree fell on his house. About 20 minutes later, the winds started picking up again and it was like a freight train coming through the living room for the next hour-and-a-half to two hours.*

*"I woke up the next morning and I was still shaking. I opened my front door the next morning and I did not recognize the place where I lived.*

*"The damage is simply unbelievable. You cannot imagine it. It looks like someone dropped an atom bomb on the place.*

*"I don't think people took the storm seriously. They think we're down here crying about the wind damage. People don't realize the amount of devastation that has taken place. If it hadn't been for the evacuation, there would have been substantially more deaths."*

—Tom Cannon
Patriots Point Links
Charleston, S.C.□

ASSOCIATIONS

## ALCA searches for new exec

FALLS CHURCH, Va. — The Associated Landscape Contractors of America (ALCA) is searching for a new executive director in the wake of Terry Peters' resignation.

ALCA has formed a Search Committee to conduct interviews with possible candidates. The person the committee seeks will have "strong interpersonal skills," says ALCA president Ron Kujawa. That person could come from the landscaping industry, from marketing and sales, or it could—like Peters—be a person currently directing another association.

"We're lucky to have a good, competent and professional staff in Washington," says Kujawa. "That gives us the luxury to take our time and get the person we really want. We don't have to rush."

During his four-year tenure with ALCA, Peters administered a growth in the association's insurance program from $10 million to $30 million; merged the Interior Plantscape Association into ALCA; and helped create the Green Industry Exposition.

Anyone interested in being considered as ALCA executive director should contact the organization at 405 N. Washington St., Falls Church, VA 22046; phone is (703) 241-4004. □

TECHNOLOGY

# System reclaims sewage

BEVERLY HILLS, Calif. — Atlantic Northern Corp. has developed a water recycling system that reclaims sewage wastewater for agricultural and landscaping purposes otherwise endangered by the increasing water shortage.

Micropure will be put on the market nationwide by the end of the year, says company president Craig Rhoades. It will be offered to the private and public sectors to conserve fresh water and cut water bills.

The unit uses an electrical charge to kill bacteria in the water. It then "globs" and filters out solid waste, which can be used as fertilizer. The household unit is about the size of a refrigerator and doesn't have high pump or electricity costs, Rhoades notes. "Maintenance isn't very high, either." Total processing costs run $1.50 to $1.75 per gallon.

The city of Monterey, Calif., has cut its water costs by 20 percent using the Micropure system, Rhoades notes.

"We're moving out of the 'disposable society' frame of mind," he says.

Urban and rural communities using septic tanks and overloaded municipal sewer systems could also irrigate their farmlands, golf

*continued on page 14*

JOHN DEE

# Here's what Dan Nordell hits the slopes with each winter

**Steep slopes and winter rain** used to make mowing tough for superintendent Dan Nordell. No more. Now, a John Deere 3325 Professional Turf Mower mows fairways at the Contra Costa Country Club outside Oakland, Calif. And Nordell and his members have all noticed the difference.

"**The weight transfer system** on the 3325 is a big help in the winter when the ground gets wet," says Nordell. "You just flip a switch and keep right on mowing. We demo'ed the 3325 along with three other fairway mowers on some of our bigger hills before we bought one. Some of the other units couldn't even climb them.

"**Since then, we've put over 700 hours** on the 3325 and it's done a beautiful job. It's faster than other mowers, and I like the single lever lift of all five reels for cross-cutting. Our members have noticed, and commented, about the improvement in our fairways."

**Talk to your John Deere distributor** today for more information on all we have to offer. Or write John Deere, Dept. 956, Moline, IL for free literature. We know, like Dan Nordell, you're going to like what you see.

*A John Deere 3325 Professional Turf Mower handles all the fairway mowing at the Contra Costa Country Club outside Oakland, Calif.*

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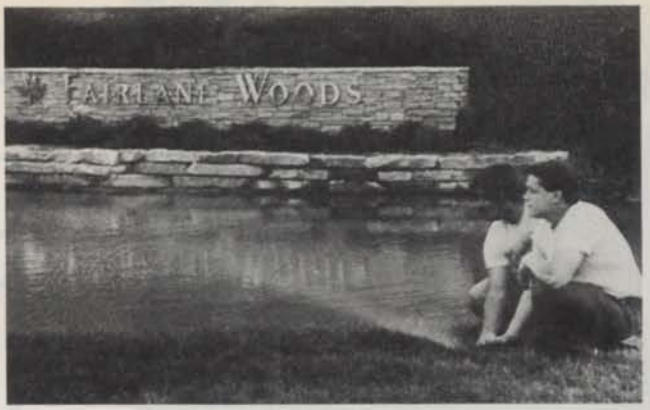


**Bill Heald (left) and Mark Neville of B&S Lawn Sprinkler adjust a sprinkler irrigation head at the entrance to the Fairlane Woods community in Dearborn, Mich.**

INNOVATIONS

# Market seen for 'enhancements'

DEARBORN, Mich. — A new market for sprinkler irrigation contractors has emerged in the United States, according to Mark Neville of B&S Lawn Sprinkler Systems & Service of Southfield, Mich. This market for "landscape enhancement" items (aerator-fountains, nightlighting, artificial waterfalls, etc.) is virtually untapped, he says.

"The scales could turn to where we do more lighting than sprinklers," he says. "It probably would make us more profitable."

Because nightlighting and fountains are less developed markets than sprinkler irrigation, there is less competition and less price sensitivity among customers than in sprinkler irrigation, Neville believes.

His company was responsible for the landscaping at nearby Fairlane Woods.

"Landscape enhancements extend our options tremendously," he notes. "There's not a full-fledged apartment building in this area that has a great variety of landscape lighting, pumps, waterfalls and so on. It gives credibility to the product. People know they can count on it.

"Where there may have been skepticism with customers about landscape lighting in the past, they'll feel comfortable now."

B&S installed Loran nightlighting at Fairlane Woods' entrance security booth, below a waterfall in a pond at the entrance, around the pond, down the main road along the woods' edge, around the clubhouse grounds, on an island with a gazebo in a larger pond, and in the pond adjacent to the clubhouse shining onto a stone wall.

This new concept includes all hardware that can enhance the exterior of a property, says Ernie Hodas, president of irrigation supplier Century Rain Aid. That is to say, landscape lighting, aerator fountains, bridges, gazebos and underwater lighting. □

**SEWAGE** *from page 11*

courses and parkways while conserving fresh drinking water, says Rhoades.

"Available clean water in the U.S. has reached a crucial turning point. Fresh water for agriculture and irrigation will become scarce because potable water has become a premium commodity."

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# SHORT CUTS

**HORRIFIC HUGO...**Hurricane Hugo not only temporarily ruined golf in the Carolinas (see page 8), but it also took its toll on home lawns. Most LCOs were wielding chain saws as dazed citizens returned to what was left of their homes, according to a report in this month's LAWN CARE INDUSTRY magazine. "The beautification of someone's lawn is the last thing on most people's minds. I think we'll just be able to survive," said **Ellen Boutwell**, office manager of Lawn-O-Green in Summerville, S.C., just outside of Charleston. Treatments will most likely be needed to control fire ants, yellow jackets and other insects stirred-up and made homeless by Hugo's wrath. That won't be an immediate source of income because "the homeowners won't come across them because they're concerned with getting a roof over their heads." Numerous yards had gouges where trees, poles, cars and houses were slammed to the turf.

**John Piersol**

**FINNISH CUP'O'TEE...**Demand for tee times is much higher in Finland than in the U.S., says **John Piersol**, golf course division chairman at Lake City Community College in Florida. He recently spent 12 days in the Scandinavian country at the invitation of its Sports Institute. "Golf is one of the fastest-growing participatory sports in the world," he observes. "Our (golf) program at LCCC is recognized by most leading golf courses in America as the best in the country. We're out to make that reputation worldwide." Finland, Piersol notes, will add 15 to 20 courses in the next few years.

**HAPPY B-DAY...**To E-Z-Go Textron, the oldest and largest golf car and utility vehicle manufacturer in the country. E-Z-Go celebrated its 35th birthday a couple months ago, and guest of honor at a special ceremony was co-founder **B.F. Dolan**.

**CHEERS...**That's what entrants in the annual Special Olympics should have for Briggs & Stratton. The small engine company raised $6,730 for the Wisconsin and Kentucky Special Olympics with a five-kilometer run held at Expo '89 in Louisville, Ky. "We are pleased that so many show attendees participated," said CEO **Frederick P. Stratton, Jr.** "Together, we are helping support Special Olympics' worthwhile efforts to provide sports and recreational opportunities for our mentally retarded citizens."

Now Sevin® gives you two ways to control tough turf pests.
Now SEVIN® brand carbaryl insecticide is available in an easy-to-handle granular formulation. So you have two ways to apply the effective, economical and environmentally sound control of SEVIN® brand carbaryl on your toughest turf pests.
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## Savage Heat Waves, Water Shortages, Parched Farms

## Year After Year After Year

**The National Arbor Day Foundation Urges You to Plant Trees to Fight the Greenhouse Effect**

The Greenhouse Effect may take hold of the Earth in your lifetime.

**If that happens, the huge polar ice caps may melt, causing oceans to flood coastal cities. Drought will plague America's breadbasket. Rivers that supply water to cities will dry up. Heat waves will be commonplace.**

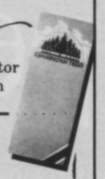
A sharp increase in atmospheric carbon dioxide is a major cause of the Greenhouse Effect. Trees remove carbon dioxide from the atmosphere, but mankind has destroyed a third of the world's forests.

**You can make a difference.** Trees you plant may be our best line of defense.

**Free Booklet.** The National Arbor Day Foundation has published a free tree planting guidebook titled *Conservation Trees*. Return the coupon below and I'll send your free booklet by return mail.

John Rosenow

John Rosenow, Executive Director
National Arbor Day Foundation



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Circle No. 141 on Reader Inquiry Card


LAWN CARE

# Service still king, but is hard to find

MINNEAPOLIS — Service in America stinks.

That's the opinion of author Ron Zemke who does not hesitate to tell the lawn care industry so.

Why is service so lousy when most businesses realize how important good service is to their success?

"Because," says Zemke, "they try to manage the delivery of services the same way they manage the production of commodities," and those two concepts are like night and day.

Zemke believes there are four keys making up "the service triangle:"

- Understanding customer wants and needs.
- An articulated service strategy, a sense of what is to be accomplished with the customer. "When everyone in the organization knows what you are trying to do to and for the customer," says Zemke, "you stand a chance of it happening."
- Delivery systems—or rules—that are designed with the customer in mind.
- Well-trained employees who understand the needs and wants of the customer, and who are in line with the company's strategy for meeting those needs.

**Ron Zemke**

Zemke says the corporate hero of the 1990s will be the executive who understands the world of service, and stives to satisfy the needs of both internal and external customers.

"The successful organizations will be those known for their steadfast commitment to service quality, and their ability to deliver it without fail."

"If you're not serving the customer," says Zemke, "you'd better be serving someone who is."

Zemke's latest book is titled "Service America! Doing Business in the New Economy." □

SEED

# Demise of field burning?

MARTINSVILLE, N.J. — This year may in fact be the last time open burning of seed fields is allowed in Oregon, says Gary L. Parker, general manager of Lofts Great Western Seed Co. Next year, growers will be spending substantially more money to eradicate remnants of the 1990 crop, he says.

"We'll be okay this year," Parker says. "They (the Oregon state legislature) are not going to shut us off completely, unless something truly unexpected happens."

Parker, addressing visitors at the Lofts Annual Field Day, says that propane burning is the most likely alternative, though it will add anywhere from $20 to $70 to the cost of field burning. "I think the actual increase will be closer to $40 an acre," predicts Parker. "Yes, it's an added expense, but if the legislature says that's the way it's going to be, that's the way it's going to be."

Parker notes that propane equipment will cost growers close to $30,000, but that isn't his biggest worry. "We're at the point now where they want to regulate propane burning too. We're a little nervous about that. Hopefully calm heads will prevail." □

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Soluble Potash (K2O) ..... 9%
Magnesium (Mg) ..... 1.0%
Sulfur (S) ..... 8.0%
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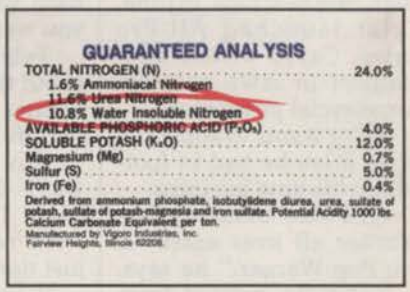
Nutrient Sources: Urea, Methylene Ureas, Ammonium Phosphate, Ammonium Sulfate, Ammoniated Superphosphate, Sulfate of Potash, Oxides, Ferrous Sulfate, Sulfates.
Potential Acidity Equivalent 1300 lbs. Calcium Carbonate per Ton.

*Lebanon Country Club*


GUARANTEED ANALYSIS
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10.8% Water Insoluble Nitrogen
AVAILABLE PHOSPHORIC ACID (P2O5) ..... 4.0%
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Magnesium (Mg) ..... 0.7%
Sulfur (S) ..... 5.0%
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*Par Ex*

Down in the analysis area on every fertilizer bag, you'll find the "fine print" that tells you what the big print doesn't. Read all of it. Carefully. But most importantly, look at the percentage of Water Insoluble Nitrogen.

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Circle No. 108 on Reader Inquiry Card

# From tearing up turf to laying down sod

LANCASTER, Calif. — Wendell Tyler has gone from tearing up turf to laying down sod.

The former Los Angeles Ram and San Francisco 49ers running back has come to the Antelope Valley, the desert area of Los Angeles County, to start a lawn care business. In June, Tyler launched All-Pro Lawn Care, which specialized in lawn care for commercial properties.

Tyler wants to apply the same drive he had in football to his new business.

"It's like being at Pop Warner all over again—a pro Pop Warner," he says.

Tyler, 34, retired from football three years ago, but he still looks as if he could play the game. The 5-foot-10, 180-pounder still appears to possess excellent upper body strength.

References to his football past pop up often in Tyler's conversation. He believes his football background will help him in business.

"From football, I have dedication, discipline and determination," he says. "I believe that if you work hard you can do anything you want to."

Tyler speaks constantly about the virtues of having dreams and working hard to fulfill them.

"I'm always working, always dreaming. I've got goals. That's what's wrong with some people—they just don't dream," he says.

If championships are a measure of success, then Tyler's football career was a successful one. As a collegiate, he played in a Rose Bowl with UCLA, and as a professional he played in two Super Bowls. He earned a World Championship ring with the 49ers when they pounded Miami in Super Bowl XIX.

**Wendell Tyler (left) and his ace worker Jahmal Taylor.**

"The Super Bowl is just a game," he says now. "Winning the Super Bowl is like a business deal. You have business to take care of. Not only do you cut the deal,

Stop crabgrass from grabbing hold

Once crabgrass takes hold, you're the one who gets squeezed. Angry customers want your neck.

Well now there's a pre-emergent program that's custom-tailored to your needs. It's a unique herbicide program available at your DOTS distributor.

You can choose from TEAM,™ SURFLAN,® BALAN® or XL™ depending on your location and turf conditions. Your DOTS distributor will customize your choice by matching your desired

but you wrap up the deal."

His football fame has opened up some business opportunities for him.

"I am doing a job for a Cadillac dealer and I could see that he respected me. It was, 'Hey, I'm working with Wendell Tyler,'" he says.

Word-of-mouth will spread faster if the job is done right, Tyler notes. But it will also spread fast if the job is done wrong.

"The key is service: be there on time, do what you're paid to do, and do the job the best you can," he says.

One of his workers is foreman Jahmal Taylor, a 20-year-old with an unusual background: 10 years as a member of the Crips, a Los Angeles street gang.

Taylor used to walk the streets, armed with a .357 Magnum, selling dope. Tired of gang life, Taylor sought out the Inner City Youth Ministries Academy in Rosamond.

The academy, established by Tyler and former gang member JoJo Sanchez, is a place where troubled youth go to straighten out their lives.

Tyler's All-Pro Lawn Care serves as an occupational training program for the youth academy.

Tyler was attracted to the Antelope Valley because of its rapid growth. The area is one of the fastest-growing regions in the country. The population of the area's two principal cities, Lancaster and Palmdale, grew from a combined total of 60,304 in 1980 to 128,500 this year.

Tyler started his business on the advice of a developer who told him to take advantage of the construction boom. The rapid growth of the area has provided Tyler with a pool of ready customers, and he is reaping the profits already.

—*James Skeen* □

PESTICIDES

## New pyrethroid is approved by EPA for use by lawn care companies

KANSAS CITY, Mo. — The EPA has accepted registration of Tempo insecticide for use on home lawns.

Tempo, an advanced-generation pyrethroid from Mobay Chemical Corp., was introduced for indoor pest control and ornamental insect control in 1988.

"Tempo can be used effectively at lower rates of active ingredient than most organophosphates, carbamates and other pyrethroids on the market," notes Mobay marketing manager Hal Paul.

Tests show Tempo to be compatible with commonly-used fungicides, liquid fertilizers and other insecticides in tank mixes. Mobay is also promoting Tempo for tick control in response to concerns about Lyme disease nationwide.

Registration for use on commercial turf and golf courses is pending. □

**NEXT MONTH:**

- ***LM's "State of the Green Industry" report***
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Circle No. 114 on Reader Inquiry Card

COVER STORY

# WINTER, A TIME OF R&R FOR YOUR EQUIPMENT

Like your body, landscaping equipment can last longer if you take care of it year round. Shenandoah Valley Golf Club has found secrets that increase its machines' life expectancies.

*by Jay Holtzman, contributing editor*

**The thorough off-season maintenance performed by mechanic Calvin Smith (l) at Shenandoah Valley Golf Club allows superintendent Eric Linde (r) to clip about $15,000 from his annual equipment budget.**

If you're like most landscape professionals, you push your equipment pretty hard during the busy season. The job demands it. But just as demanding is the stress and strain on equipment. Machines that are used hard must be carefully cared for, and the off-season is the perfect time to completely clean, inspect, repair and refurbish equipment which has put in a long season of work.

Not that any once-a-year routine can make up for a failure to maintain mowers, trucks, hand-held equipment and other machines throughout the year. Proper maintenance has to be a constant effort. But winter is the season when there aren't any excuses for failing to do the job 100 percent.

"There's a lot you can do in the off-season," says Eric Linde, superintendent of the Shenandoh Valley Golf Club in Front Royal, Va. "In fact, it's the one time of year when we can really be thorough with our equipment.

"This time of year also gives us the leeway to let a piece of equipment go down for quite a while. During the season, we have such demands on the equipment that we can't let it go down."

The off-season is the time to go back and make perfect those repairs that were done expediently rather than the best way during the season, Linde explains.

"Let's say a piece breaks on a tractor during the season. We may weld that piece together while it is still mounted on the tractor because we need to keep using it. The winter time allows us to go back and fix that thing once and for all. We can examine the source of the problem and address it at that point."

By the same token, the off-season allows time for careful and thorough maintenance as well, and that starts with cleaning the equipment.

"Typically, when a piece of equipment goes out of service for the year, it will be steam-cleaned from head to toe," Linde says. "That means all the cowlings and everything else will come off the machine. Then it is painted, too, if it's required.

"It's also the time of year when we have time to rate batteries, go over belts and hoses that aren't often seen, and examine all the other parts that can deteriorate or wear."

## Two-fold maintenance

It's a period when you can get ready for the coming of spring as well as catch up from the previous season.

"That's when we do things like pack all the wheel bearings. It might be that a certain truck only needs to be packed once a year, or even once every two years. But we can't afford to let it wait. We don't know how much we are going to use that piece of equipment next season; that's why our annual maintenance program goes much further. In the summer if a brake feels bad, we adjust it. But in the winter, we pull the hubs, examine the brakes and do what's necessary," Linde explains.

Autumn's annual maintenance chores are scheduled by Linde and his full-time mechanic, Calvin Smith, together. "Calvin and I will schedule how we want to go through this period, because we often run our dump trucks and some other equipment well into the season. Then he directs from there," Linde says.

Formally scheduling a full maintenance program in the off-season helps Linde maintain a crew of 13 year-round out of a summer season peak of 20 persons.

This crew not only maintains the

## Disposable equipment?

As careful as most professionals appear to be about maintenance—everyone stresses the need for a good, year-round maintenance program—many find that some small, hand-held equipment such as string trimmers don't repay careful maintenance in the same way as larger machinery.

"We almost always replace trimmers every season," explains Tim Haney, executive director at Woodlawn Cemetery, Toledo, Ohio. "We are using them about 40 hours a week through most of the summer and up until the leaves fall, and some 55 to 60 hours a week in the spring. Somebody told me that was like driving a car 250,000 miles."

Adds Eric Linde of Shenandoah Valley Golf Club: "We go out and buy a good one and then we find someone local to maintain it, but after it starts to develop downtime for little things, we just throw it away. Don't hang it on the wall because it isn't going to make you any more money. When a guy in the field needs one of these, he needs it to work. In the contracting business it gets down to the minute as to how we are going to make our money and if something like that doesn't work, it's just like you're throwing money on the ground."

Even equipment like string trimmers that many professionals consider disposable can play a role in keeping crews working effectively.

"I try to hold onto our trimmers until about the first week in May so that when the guys start to get discouraged with the old ones, I can break out the new equipment," explains Haney. "That way, they work more efficiently through Memorial Day, which is obviously a key time in our year. This has worked out well because the guys feel good about the new trimmers and the novelty doesn't wear off before the holiday."

*—Jay Holtzman*□

27-hole golf course, but works for a related outside contracting service with annual volume of some $250,000. All in all, they maintain a fairly large stable of equipment, including eight triplex mowers, two rough units, two fairway units, three tractors, a backhoe, assorted utility and pickup trucks—the equipment for what Linde calls "a well-equipped 27-hole course"—plus the compressors and air-conditioning system for the clubhouse.

"We're not undercapitalized at all," Linde notes, "so we're very mainline in equipment: Toro and Jacobsen mowers and Chevy trucks. We buy what we feel is best."

### Divvying it up

Once the work is scheduled, the mechanic and crew divide it between them.

"When it comes to ordering parts and the technical stuff, the mechanic does it. But most of the time he tries to get our full-timers to work on a single project each," Linde explains. "If we are doing a brake job on a dump truck, for example, one of the full-time crew will get the truck up on jacks, take the wheels off and clean out the drums. Then Calvin can take a look at it."

One man generally stays with the job until it is done, he says.

"We try to put the guy on a job until it's completed. If the job requires parts, for example, then he runs to get them. He does all the set-up work and helps finish up when Calvin is done. The mechanic does the actual repair. But it helps make the guy feel better about the operation when he can stay with a job all the way through," Linde explains.

*It's a period when you can get ready for the coming of spring as well as catch up from the previous season.*

As thoughtful as this approach to maintenance is, Linde stresses that though it's thorough, it isn't fancy.

"Our place is looked on as a model by the equipment manufacturers. But we aren't doing anything fancy like X-raying the equipment. We're just being very thorough with what the manufacturer suggests," he says.

Such a thorough approach to end-of-season maintenance, and to maintenance in general, requires good organization. Linde has found a simple tool that he says has been a tremendous help in keeping his shop in order: a large metal file like those found in auto parts and hardware stores for holding catalogs.

"This file holds our entire collection of parts books, maintenance manuals and other paperwork that comes with the equipment. It's the heart of our shop; it's what our inventory is based on," he says. "Whenever any piece of equipment comes in, the paperwork goes in this file. Anyone can go in there and look up a part or find the schematic drawing for what they're working on. If they're working on a machine somewhere else, they can come in and find the manual they need and take it with them. If we need a part number or a phone number, we don't have to dig through a drawer. It's right there," Linde notes.

Best of all, as effective as the file is, it was inexpensive—just $125.

"I rate my equipment by how many years it should last," Linde relates. "And it's outlasting the years I

# $$ saved = $$ earned

By and large, there are plenty of good reasons to pay careful attention to your equipment's winter maintenance program. Most professionals agree that every dollar spent on maintenance is a dollar invested that pays itself back.

"We spend many, many dollars on maintenance, but it's still the cheapest thing to do," says Herbert Brown, superintendent at Wandermere Golf Course in Spokane, Wash. He points to the high cost of equipment as one of the best reasons for giving maintenance practices close attention.

"When you were paying $3,500 for a greens mower, people used to trade them in every few years and get a new one. But now you're paying $12,000 or $13,000 for that mower, and you can't afford to trade it in every three years. You've got to maintain it and keep it."

Such maintenance pays for itself in the examples Brown cites.

"I've got a 1974 fairway mower that was $9,000 when I bought it and that now costs $35,000 (comparable model new). It's still running well because of its maintenance. I've also got a 1977 greens mower that's still like new," he says.

—*Jay Holtzman*□

**It's more cost effective to sink money into maintaining equipment than replacing it, says Shenandoah Valley mechanic Joe Casteel.**

project for it because my mechanic is so good about taking care of it. For example, I've got a 1978 greens mower that is supposed to last six years. Six years is enough. But it is still dependable, even though we now use a back-up unit."

This has a direct and positive effect on his budget.

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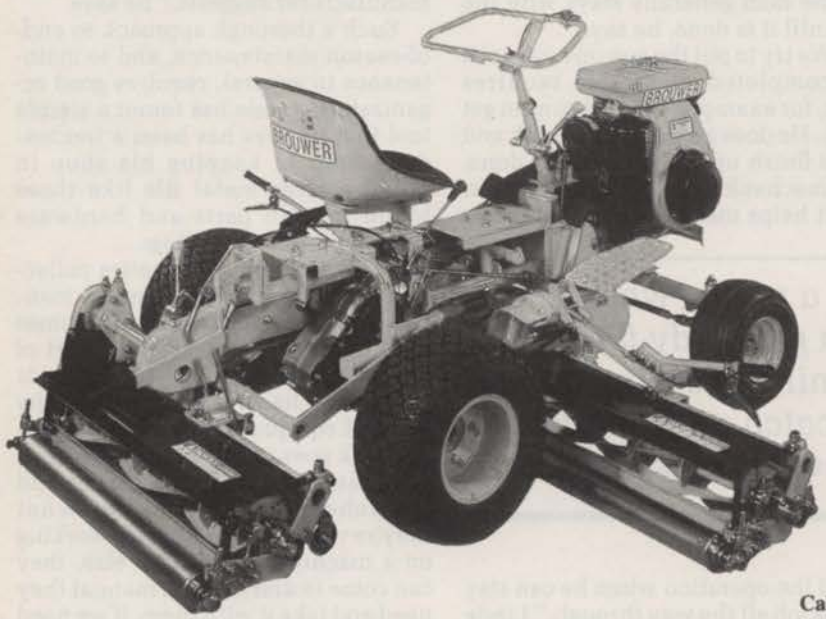


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**The Shiki-En, or Four Seasons Garden, laces its way through the office buildings of Bannockburn Lake Office Plaza in Lake County, Illinois.**

# EAST MEETS WEST IN SUBURBAN CHICAGO

Japan's latest export is the serenity and peace of its gardens, which one developer used to further soften his suburban Chicago office complex.

*by Will Perry, managing editor*

When real estate developer Allen S. Pesmen left his downtown Chicago law practice, one of the things he didn't miss was the congestion and inconvenience of city life. And when he carved his beautifully landscaped Bannockburn Lake Office Plaza out of the woodlands of undeveloped suburban Lake County, he made sure the only thing he brought in from the city was tenants.

The Plaza is a 66-acre development with three (soon to be four) 106,000-square-foot buildings and a health club. Begun in 1977, it was the first of its kind in then-undeveloped southern Lake County.

After 22 years of commuting to and from the Loop, Pesmen decided he wasn't the only one who would enjoy working in an environment where ponds and trees replaced parking lots and telephone poles. The park's 100 percent occupancy rate attests to Pesmen's accuracy.

## Downtown alternative

"It's mostly a whiplash from working downtown," says Pesmen of the Plaza's serene campus. "There the emphasis is up, up, up. If you're really socially conscious in the city, you'll stick a plant in a container box and put it outside your door. Here we've created a peaceful environment that doesn't attempt to be 'the city transported to suburbia.' It's quiet, relaxing..."

The park's most recent addition is an authentic Japanese garden that will eventually cover 10 to 11 acres of the complex. The garden's inspiration came from Pesmen's fascination with similar gardens in the U.S. and particularly Japan, where gardens offering peace and tranquility exist in the heart of dense, unattractive urban centers. In effect, such gardens mirror the concept of his office complex as an alternative to an inner-city location.

The garden was designed by Takeo Uesugi, Ph.D., a principal of Takeo Uesugi & Assoc. of West Covina, Calif. Uesugi, 48, is a professor of landscape architecture

**Chicago's regional landscape is captured in the form of waterfall, stream and the overall "lake-scape" effect of the garden.**

**The Japanese garden is based upon an ancient garden design book, Sakuteiki (1040 A.D.), where traditional techniques are expressed in the planting, mounding, stepping-stones and methodical rock arrangements.**

**Allen S. Pesmen, left, president of Bannockburn Park Concepts, Inc., and his son Brian.**

at California State Polytechnic University in Pomona and a 15th generation landscape architect.

Other Uesugi projects include the Japanese American Cultural and Community Center Garden in Los Angeles, the Naiman Tech Center, San Diego, and Epson Madrona, in Torrance, Calif. Pesmen believes that the Bannockburn garden, Shiki-En, or Four Seasons Garden, will be the largest private Japanese garden outside California.

### Garden makeup

The first phase of the garden features a tea house, waterfalls, lanterns and bridges. Plants common in Japanese gardens and adaptable to the Chicago climate are incorporated among existing woods and lakes. Pine trees provide dignity and durability. Willows express flexibility. Magnolias enchant. Crabapples, plums and redbud capture the sense of spring. Maples and river birch capture autumn. If he can find a variety of bamboo that can withstand the harsh Midwest winter, Pesmen hopes to plant it as well.

The garden holds more than one million pounds of boulders brought in from Wisconsin and North Carolina, as well as Nitto granite from Japan. The boulders are white to dark grey in color, rough to intermediate in texture, and rugged to tranquil in form. The Japanese concept of In and Yo, or negative and positive, and the numbers of 7, 5, and 3 are incorporated to achieve symmetrical balance in the garden.

Two islands reach into the main pond, symbolizing a turtle and a crane which represent longevity and cheerfulness, respectively.

Bannockburn Lake Office Plaza has an in-house landscape crew. Pesmen says maintaining the garden has been a new yet welcome challenge for them.Ornamentals were planted by the Theodore Brickman Co. of Long Grove, as well as a commercial division of Amlings Nursery of Hinsdale and Miles Lindblad of the architecture firm of Krucek and Olsen. **LM**

**Above: An immature nematode photographed at 300x. Nematodes are an important biological control agent, multiply in the body susceptible insects and carry a bacteria that cause physical damage and rapid death.**

**Left: Millions of microscopic, immature nematodes hatching from eggs laid inside a caterpillar. The nematodes are searching for additional insects to invade and quickly destroy (photos courtesy of Dr. Briggs).**

# BIO CONTROLS FOR THE GREEN INDUSTRY

## Biologicals gain more acceptance as safe and effective alternatives to chemical pesticides.

*by John D. Briggs, Ph.D., Ohio State University*

Landscapers and horticulturists face questions from employees, the general public and clients about virtually every material they use.

Recent governmental safety investigations have provided some level of confidence in the products. But the result is increased time and costs for landscapers to explain their practices to clients.

In the past 25 years—particularly in the past decade—safe and useful alternatives to conventional pesticides have received serious attention. (Especially since government regulatory agencies have increased and refined manufacturer and applicator guidelines through federal, state and local legislation.)

Biological alternatives to conventional chemical pesticides are referred to by federal agencies as "bio-rational" agents. Manufacturers continue to center on bio-rational agents that attack and cause diseases of insects, mites and certain weeds.

### Micro-organisms cause disease

The five principal groups of micro-organisms that can cause diseases of insects are bacteria, fungi, viruses, protozoa and nematodes. From these groups, bacteria, fungi and nematodes are used to market products to the landscape market (Table 1).

Milky spore products for long-term control of Japanese beetle grubs contain bacteria. These products have been under development and successfully sold under different trade names in the eastern U.S. for almost 50 years. They contain the resting spores of *Bacillus popillae* formulated as a dust for application to turf. *Bacillus popillae* spores physically damage the mid-gut and growth of the bacteria in the body cavity of beetle grubs.

For the past 30 years, another bacteria, *Bacillus thuringiensis*, has been produced and marketed by 20 different companies for managing populations of larval forms of some species of flies, beetles and moths. These products are often referred to collectively as "BT." Several manufacturers in the U.S. have registered formulations of bacteria with the EPA and USDA for landscape use (Table 1).

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Mode of action for *Bacillus thuringiensis* is by a toxin produced by the bacteria which attacks the mid-gut cells and moves to the body cavity. The toxin, produced during the manufacturing process, is the active ingredient in formulations. The toxin makes the use of *Bacillus thuringiensis* unique, because the mode of action is the result of a pesticide toxin made by a bacterium.

We can now recognize three different toxins from *Bacillus thuringiensis* attacking three different kinds of insects: caterpillars (*Lepidoptera*), mosquitos (*Diptera*) and beetles (*Coleoptera*). Only the bacteria attacking caterpillars and mosquito larvae have been registered for use to date.

Important progress has been made in the production, formulation and marketing of nematodes that attack immature forms of insects in the soil and on plants. The developmental stages of insects (larvae active at night on plant parts or pupae hidden from predatory natural enemies) are primary targets.

An essential condition for nematode survival is adequate moisture in or on the material inhabited by the immature insect. Moist soil and/or moist plant parts are ideal sites for the activities of *Neoaplectana carpocapsae* nematodes. These nematodes can enter the body of an insect through any body openings, particularly the mouth and spiracle, into the respiratory system.

Nematodes are an important biological control agent because they respond to the presence of susceptible forms of insects and literally seek out their prey. *Neoaplectana* nematodes, which are marketed for use against insects, carry a bacteria that causes physical damage accompanied by rapid death. Further, the use of nematodes is attractive because they multiply in the body of the attacked insect which, in turn, increases nematodic egg production. This action results in a continuous supply of nematodes to control additional generations (if moisture conditions are suitable).

## Biological herbicides

In the past five years, research activity has centered on possible biological herbicides.

For many years, we have accepted the idea of importing insects that have a specific appetite for certain weeds (a biological control). This has been accepted as a principle for control of the Klamath weed and Tansy ragwort in California and Oregon. In Australia, caterpillars are used to control cactus. In addition, experiments continue in Florida for controlling aquatic weeds by using specific viruses that infect only the weeds.

Abbott Laboratories has registered Devine as a biological herbicide in agricultural systems using a natural enemy of the weed. Although it is temporarily for use only in certain counties in Florida, we can expect a continuing line of herbicides for biological control. Eventually, these developments will provide the professional landscape horticulturist with the necessary array of bio-rational agents for both weeds and insects.

## Product formulations

Bio-rational agents have been widely developed into a full range of formulations for their safe use and application with equipment used by horticulturists. Further, industry has been able to adapt a heat- and pressure-sensitive living product (the living bacteria and their toxins), to formulation procedures, and has maintained the activity of a bio-rational agent which could otherwise be harmed when exposed to procedures commonly used for formulating conventional chemical insecticides.

The production method for bacterial insecticides (for example, *Bacillus*

## Everything you always wanted to know about bio-rational agents, but were afraid to ask

**What they are:** Bio-rational agents are biological alternatives to conventional chemical pesticides. They are micro-organisms that attack and cause diseases of insects, mites and certain weeds. Of five principal groups of micro-organisms, bacteria, fungi and nematodes are used in products marketed for landscapers.

**Milky spore disease bacteria invade grubs of Japanese beetles.**

**How they work:** Milky spore products are a good example of how biological control of insects take place. Milky spore products contain the resting spores of the bacteria *Bacillus popillae*. These spores physically damage the mid-gut growth of the bacteria in the body cavity of beetle grubs, thereby destroying them.

Such products have been on the shelves for about 50 years. Newer formulations are available for control of flies, beetles and moths. Bacteria that attack caterpillars and mosquito are also available, and important progress has been made on nematodes that attack immature forms of insects in the soil and on plants.

**How biological herbicides work:** The concept behind biological herbicides is basically the same. In Florida, researchers are looking at specific viruses that infect only aquatic weeds, and Abbott Laboratories has registered a biological herbicide for use in certain counties. Landscapers can expect to add bio-rational agents to their weed-control arsenal in the near future.

**How bacterial insecticides are formulated:** Bacterial insecticides, such as those for caterpillars and mosquito larvae, include a final fluid suspension of bacteria. Dried products, like wettable powders, require a resuspension of the stable powder in water. Dry, granular formulations are also available, eliminating the need to use spray equipment.

—*Dr. John Briggs*□

# Three ways Mazda trucks outperform the competition.

1989 Mazda B2200

If you're about to commit your company's resources to building a truck fleet, you've probably looked at Ford Ranger, Chevrolet S-10, Toyota and Nissan. But your shopping list isn't complete until you've taken a good look at Mazda. Because Mazda trucks offer some very important advantages over the competition.

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| 1986 | 1987 | 1988 |
|---|---|---|
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| TOYOTA #2 | TOYOTA #2 | TOYOTA #2 |
| NISSAN #5 | NISSAN #3 | NISSAN #4 |
| CHEVROLET S-10 #6 | CHEVROLET S-10 #7 | FORD RANGER #8 |
| FORD RANGER #9 | FORD RANGER #9 | CHEVROLET S-10 #10 |

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| Standard Features | Mazda B2200 Base | Toyota Standard | Nissan Standard | Ford Ranger "S" | Chevrolet S-10 "EL" |
|---|---|---|---|---|---|
| 5-speed | Standard | N/A | Standard | Standard | Standard |
| Automatic transmission | Optional | N/A | Optional | N/A | N/A |
| Double-wall cargo bed | Standard | Standard | Standard | Standard | Standard |
| Tinted glass | Standard | Optional | N/A | Standard | Optional |
| Steel-belted radials | Standard | Standard | Standard | Standard | Standard |
| Full carpeting | Standard | N/A | N/A | N/A | N/A |

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* J.D. Power & Associates 1986 and 1987 Compact Truck CSI and 1988 Light-Duty Truck CSI customer satisfaction with product quality and dealer service.
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† GM's 36-month/50,000-mile "Bumper-to-Bumper Plus" Warranty requires $100 deductible per visit after 12 months/12,000 miles.
†† Comparisons with other makes based upon available competitive data.

mazda

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**Example of Formulations and Pesticidal Activities of Biorational Pesticides Produced and Marketed for Gardens and Landscapes.**

| MANUFACTURER/TRADE NAME | FORMULATION | CONTENT |
|---|---|---|
| Biologic Co.<br>Chambersburg, Pennsylvania | | |
| **Insecticidal Nematodes for Caterpillars (Lepidoptera), Beetle Grubs (Coleoptera)** | | |
| SCANMASK | Granular and Liquid | 7 Million Active Units per pint (granular)<br>One Billion Active Units per gallon (Liquid) |
| Fairfax Laboratories<br>Clinton Corners, New York | | |
| **Insecticidal Bacteria for Beetle Grubs (Coleoptera)** | | |
| DOOM | Dust | 100 Million Spores per gm |
| Abbott Laboratories<br>North Chicago, Illinois | | |
| Herbicidal Fungus | | |
| DEVINE | | $6.7 \times 10^5$ Live Chlamydospores per ml<br>($3.2 \times 10^5$ per pint) |
| **Insecticidal Bacteria for Caterpillars (Lepidoptera)** | | |
| DIPEL ES | Emulsifiable Suspension | 17,600 International Units of Activity per mg<br>(63 Billion International Units per gallon) |
| DIPEL 2X | Wettable Powder | 32,000 International Units of Activity per mg<br>(14.52 Billion International Units per pound) |
| DIPEL 4L | Emulsifiable Suspension | 8,800 International Units of Activity per mg<br>(32 Billion International Units per gallon) |
| DIPEL 6L | Emulsifiable Suspension | 13,200 International Units of Activity per mg<br>(48 Billion International Units per gallon) |
| DIPEL 6AF | Aqueous Flowable | 10,750 International Units of Activity per mg<br>(48 Billion International Units per gallon) |
| DIPEL 8L | Emulsifiable Suspension | 17,600 International Units of Activity per mg<br>(64 Billion International Units per gallon) |
| DIPEL 8AF | Aqueous Flowable | 14,500 Internation Units of Activity per mg<br>(64 Billion International Units per gallon) |
| DIPEL 10G | Granular | 1600 International Units of Activity per mg<br>(0.726 Billion International Units per pound) |
| **Insecticidal Bacteria for Mosquito Larvae (Diptera)** | | |
| VECTOBAC-AS | Aqueous Suspension | 600 International Toxic Units (ITU) per mg<br>(2.19 Billion ITU per gallon) |
| VECTOBAC-12AS | Aqueous Suspension | 1200 International Toxic Units (ITU) per mg<br>(4.84 Billion ITU per gallon) |
| VECTOBAC-G | Granules | 200 International Toxic Units (ITU) per mg<br>(0.091 Billion ITU per pound) |

SOURCE: The author
NOTE: This is a partial listing of biorational pesticides available.
Endorsement of the products mentioned is not intended, nor is criticism of products excluded.

thuringiensis for caterpillars and mosquito larvae), includes a final fluid suspension of bacteria. The fluid suspension contains living bacterial cells and their toxin products. Aqueous flowable and emulsifiable suspensions of the bio-rational agents reduce and avoid clumping of the bacteria and their microscopic toxin particulates.

Dried products like wettable powders require a re-suspension of the stable powder in water. The production material must be dried at a temperature that will not reduce the effectiveness of the bacterial agents or their products but assure successful suspension in water.

Producers and formulators also provide dry granular formulations that preserve the product's insecticidal qualities. Applying granular and wettable powder formulations as dry materials to soil and turf allows the professional landscaper to penetrate larval habitats without using spray equipment. For example, a combination of wettable powder or granular formulations with fertilizer can be used with granular application equipment on sod.

As with chemical pesticides, a number of factors influence the decision to select an emulsifiable or flowable formulation (which differs only in concentration of the active agent). These factors are the equipment's large or low-volume spraying capacity, the nature and volume of spray mixture additives, and the recommended concentration of active ingredients needed to be in contact with the target insect.

Some professional horticulturists may need to serve the interests of clients who have ornamental water ponds as part of the landscape. In that case, using any one of several formulations of larvacidal bacteria for mosquitos is an important addition to the service.

## Using biologicals

Aqueous suspensions and diatomaceous granules provide a suspension of larvacidal bacteria in the site. Sand granules (as carriers) deposit the bacterial insecticide in the bottom of the mosquito larval habitat.

Mosquito larvae that feed primarily at the surface encounter the bacterial insecticide in a suspension or as a floating formulation. Larvae which have a bottom-feeding behavior contact the bio-rational agent with the sand formulation which sinks and is not initially in suspension.

Granular formulations of bio-rational agents, depending on the physical qualities of the inert material, can release over an extended period of time. The granule's low solubility and the active ingredients' slow release extend the agent's residual period. This is true in ponds, in soil, in leaf axles or into the root/stem interfaces of plants.

Landscape professionals cannot expect to meet every client expectation for control of insects, mites and weeds using biological agents. However, major opportunities are now available to integrate bio-rational agents with chemical agents. That, in turn, provides the landscaper with a chance to retain the initiative for safety and effectiveness in professional programs.

In addition to their benefits to the applicator and consumer, bio-rational agents allow a high probability for the survival of beneficial organisms in the landscape ecosystem. This can reduce debate on the impact of conventional horticultural practices on honey bees, earthworms, ladybugs, green-lace wings, parasitic wasps and birds.

Next month, I will explore specifically the dreams and the realities in the quest to genetically engineer bio-rational agents. **LM**

Dr. Briggs is professor of entomology at Ohio State University, Columbus, Ohio. His research and testing activities include Introductory Entomology and Biological Control of Insects and Weeds.

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Banff is a vigorous dwarf variety that was discovered on the Banff Springs Golf Course in Alberta, Canada. There, Banff survived twenty years of continual heavy watering, repeated attacks from snow mold, and close mowing on a putting green. Just imagine what it could do for you. Banff establishes quickly and forms a disease resistant, cold tolerant, dark green turf.

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Since Touchdown's discovery by the late Tom Rewinsky on the National Golf Links of America on Long Island, this elite bluegrass has become the top choice of sod producers. Its aggressive growth habit and rapid establishment crowds out weeds and Poa annua while developing an even, dark green turf.

## MUSTANG
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Mustang is the tall fescue that looks like bluegrass. Its finer texture, darker green color, and wear and drought tolerance have made it the choice for sports field, sod, park, and home lawn use. Mustang is available straight or in TEAM – a three-way turf-type tall fescue blend that also contains Maverick II and Thoroughbred.

## Colt
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Colt is an Oregon produced variety that offers you domestic seed production benefits. It combines superior turf performance and turf quality with genetic adaptation to North American growing conditions. It is dark green, shade tolerant, disease resistant, and very winter hardy. Colt is a vigorous, low-growing variety that has excellent overseeding qualities.

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# ty of reasons.

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Crossfire turf-type tall fescue is the only strategy you need for battling a summer ambush of heat and drought. Crossfire is a lower and slower growing variety of tall fescue that exhibits a very dark green color. It combines improved heat and drought tolerance with outstanding turf quality to produce a dense and durable turf. Crossfire's high marks in overall performance during its initial evaluation proved it was ready for the field. Let Crossfire show you how to endure a long summer siege.

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## AMERICA
### KENTUCKY BLUEGRASS

America is a low maintenance Kentucky bluegrass that has a dense dwarf growth habit, dark green color, excellent disease resistance, and good shade tolerance. Perfect in mixes, America is ideal for golf course fairways, sod production, playing fields, and home lawns.

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## SHORTSTOP
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# COMMON SENSE WEED CONTROL

## Is it possible we chemical applicators are caught in our own web of "weed-free" marketing jargon and quick-fix chemicals? Come on, industry, let's get real.

*by Phil Christian III*

Controlling weeds in ornamental turf has emerged as one of the most difficult and perhaps most important issues we will face in the 1990s.

According to 1989 surveys, weeds—a natural part of the landscape—continue to be the single biggest source of customer dissatisfaction with lawn care companies. This is caused, in part, by an industry afflicted with unrealistic customer expectations on the amount of weeds acceptable in lawns.

Weeds that distract from the landscape's general appearance are considered symptoms of poor management. But a weed infestation that would threaten the actual health or vigor of the turf would far exceed any visual limits. Therefore, the real issue in weed control is how weeds affect the landscape's *visual quality*.

If we are going to talk about visual quality, we must set some criteria for how the landscape is viewed. The Mona Lisa, for example, is not very attractive when viewed under a magnifying glass. Step back a few feet within the visual range intended by the artist and it becomes a beautiful work of art.

The landscape, too, should be viewed first from a distance. "Curb appeal" should be judged by walking, standing or driving a few feet from the curb.

### On balance

Part of being in control of the landscape is keeping its various elements in relative balance. This means we must accept the existence of weeds as part of the system.

Weeds that detract from the general health and appearance or balance of the landscape are not acceptable. It is also true that some weeds are more acceptable than others. Some varieties of clover, for example, are the same color as turfgrass and grow at a similar rate. If the turf is correctly mowed on schedule, small amounts of clover will not detract from the color or texture of the lawn.

But what about the owner who says, "Don't talk to me about balance or offensive weeds versus non-offensive weeds. You promised weed-free, and that is what I want."

This same customer has been conditioned over the years by the lawn care industry's marketing efforts to think "weed-free." Why? Because companies are agreeing to perform no-charge service calls when customers see a few weeds. The customer who has shopped around in the industry may have heard a variety of unrealistic claims or promises made by lawn care operators. They have selected you to perform the services on their grass, and they expect your company to live up to all the promises they have heard.

**Your only defense against unrealistic demands and expectations is to tell the customer the truth: there is no such thing as "weed-free."** A company promises to control weeds to the extent that they will not distract from the appearance of a property when viewed from the curb. The one condition to the promise is that the customer and the landscape manager work with the company and follow its instructions to better manage the landscape for acceptable weed control.

You are in this together. We have trained the customer to believe our magic chemicals can provide a "quick fix" for weeds any time we choose to apply it. The truth is, there are numerous limitations to the application of chemicals. At some point, excess application could do damage to the turf.

Weed control should be viewed as a landscape management issue. Weed control chemicals are used as a supplement to that management program, but they do have limitations.

Do customers understand exactly what their role is in managing weed control? Have they been told, for example, a spring pre-emergent has been applied and should be watered in, and they should avoid mowing for 24 hours, since incorrect mowing practices, hand raking and de-thatching can reduce the effectiveness of the weed control program?

How many times have we made a professional herbicide application

*continued on page 42*

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# The agronomics of weed control

Welcome to the '90s. Today, chemical weed control is viewed by some as an assault on public health and our environment. It's reasonable to believe that governments may further restrict the industry's use of all pesticides, including herbicides.

To continually treat weeds without correcting the management practices that are allowing them to occur leads to frustration and dissatisfaction among clients. Total elimination of weeds should never be the goal of weed control programs.

The challenge of the '90s is to get excellent weed control from less herbicide use.

The answer lies not in future pesticides, but in understanding and applying the principles of turfgrass management. The best method of weed control is to grow a dense turfgrass. That means five key agronomic principles must be well managed. Errors in executing any of these principles can affect turfgrass density and vigor and ultimately allow more weeds.

**1)** A well-adapted turfgrass must be selected.
**2)** It must be fertilized properly.
**3)** It must be properly mowed and dethatched.
**4)** It must be properly watered.
**5)** Pesticides must be used as necessary to control weeds and pests.

## Fertilization

Excellent weed control requires proper selection, application and timing of fertilizer. Managers should fertilize to produce dense turf, not dark green color. Over-emphasizing the importance of dark green color can cause disease and insect problems.

## Mowing and dethatching

Constant clipping removal wastes much of the applied fertilizer. Mowing the turf too closely creates stress that thins turf and allows weeds. Herbicide applications can be made totally ineffective by mowing. Mowing less than 24 hours after application can remove post-emergence herbicides before they are absorbed by the weed. When pre-emergence applications are not watered in, up to a third of the pre-emergence herbicide can be removed with clippings. Mowing weeds just before treatment reduces weed control by removing leaves that would otherwise catch and absorb herbicide.

Dethatching can destroy an effective pre-emergence herbicide barrier and thin turf, allowing weeds to become established. Turf should be dethatched when it can be forced to fill thin areas quickly.

## Watering

Frequent light watering encourages weeds and disease. Weekly, heavy waterings are more appropriate. Pre-emergence herbicides should be watered in, while post-emergence herbicides should be allowed to remain on the leaf tissue. Watering prior to post-emergence herbicide applications generally improves weed control.

## Overseeding

Overseeding bare or thin areas of the lawn must be carefully coordinated. Grass seed should be chosen for its adaptibility and quality. Overseeding and weed control applications just don't mix. Most herbicides can prevent germination for at least a week after treatment and can damage young seedlings when applied too soon.

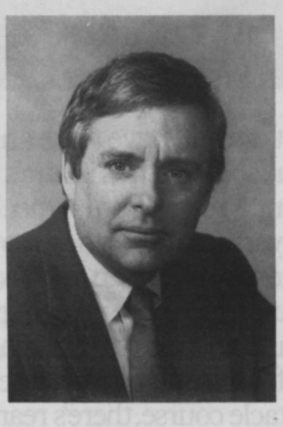
## Pesticides

Over-use of herbicides can cause weed problems by weakening the turfgrasses that provide primary protection against future weeds. Herbicides have been shown to reduce heat and drought resistance, inhibit root and rhizome growth and increase disease occurrence. Insect and disease problems must be detected and treated before extensive damage occurs.

## Communication

Communication with the customer improves weed control. The applicator must insist on proper mowing height with a sharp mower. Heavy infrequent irrigation should be encouraged. The applicator must communicate the purpose of each treatment and give specific management instructions on how to make the treatment most effective. When particularly difficult problems occur, providing pre-treatment instructions for watering and mowing can make a difference.

*—Dr. Barry Troutman*□



Dr. Troutman is director of education for the Professional Lawn Care Association of America.

# LANDSCAPE MANAGER OF THE YEAR

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LANDSCAPE MANAGEMENT

1988 Landscape Manager of the Year
**Roy Peterman**

Entry forms are now being accepted by the Professional Grounds Management Society and LANDSCAPE MANAGEMENT magazine for their third annual "Landscape Manager of the Year" award.

The purpose of the award is to recognize superior job performance among landscape managers, to challenge those involved in the industry, to achieve higher standards of excellence and to bring national recognition to deserving managers.

Any person directly responsible for the professional maintenance of one or more landscapes is eligible to enter. Applicants will be judged according to job performance, honors and awards, procedures and philosophies, and contributions to the green industry. Applicants will be asked, at the time of entry, to submit four 5 x 7 black-and-white glossy photos and 10 color 35mm slides of current work areas with a short narrative on each.

**(clip and mail)**

**Applicant's name** **Title**

**Applicant's company**

**Official entry form should be sent to:**

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**Company**

**Address** **City/State** **Zip Code**

**Mail to:** PGMS, Landscape Manager of the Year,1201 Galloway Ave.,Suite1E, Cockeysville, MD 21030, 301-667-1833

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I certify that the statements made by me above are correct and complete.
Signed: Joe Bilderbach, Vice President/Circulation

**WEEDS** *from page 38*

only to have some action taken by the customer (either before or after the application) negate its effect?

For instance, on Friday afternoon at 1 o'clock, you make a post-emergence herbicide application to a fescue lawn which had not received a pre-emergent in round one. The application was textbook, with 100 percent coverage, perfect timing and perfect weather for maximum results. By 1:15, you are leaving the customer's property congratulating yourself on a "Pride-of-the-Industry" application. At 1:30, the automatic irrigation system (which was supposed to be turned off) comes on, drenching the turf for the next two hours. Total saturation and run-off occurs 30 minutes into the cycle.

At 3:30, the high school student next door shows up on his father's new riding mower with the patented "Whirler-Sucker-Vacuum-Catcher" apparatus, and scalps the fescue down to 1½ inches. The whirling, dull blades, turning at different speeds, chop the turf into chunks while the apparatus strips the soil surface of all organic matter not tied down by a mature root system.

What is the customer most likely to complain about in the coming weeks? You guessed it: weed problems.

What is your response? Perhaps this is the time to implement your new, get-tough, tell-it-like-it-is policy.

### Our responsibilities

You might politely tell the customer you know what happened to the lawn after your Friday afternoon "State-of-the-Art" professional post-emergent application. You might also tell the customer that your unconditional weed-free warranty has been voided, and a re-spray will be an additional charge.

The customer will most likely respond by saying, "We appreciate your straight talk, and we don't deny that watering and mowing shortly after your application may have had a negative effect on your weed control program. But look at the issue from our point of view. We did not know you planned to make an application on Friday. We did not know you actually made an application on Friday. And we had no idea what we should or should not have done before or after the application, had we known about it. When will you be here to re-spray?"

The customer was not deliberately working against his or her own best interest, or against your best efforts. The customer simply did not know.

You may rationalize or argue that the customer should have requested a pre-call, or the customer should have memorized the fine print in your annual Customer Instruction Booklet.

But—the sad truth is—it is your responsibility to give the customer clear, timely, step-by-step instructions on turf management before and after herbicide application. In some cases, the information can be just as important as the application. The delivery of one without the other will reduce or perhaps negate the benefits we sell.

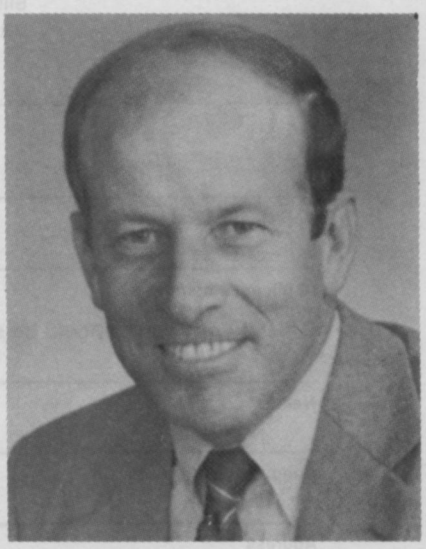
The widely-held belief that weed control is strictly a chemical problem unrealistically places the burden squarely on the chemical applicator's shoulders. A huge information gap exists between the realistic expectation for lawn care applicators and the customer's responsibility to be informed.

Is it possible we, the chemical applicators, are caught in our own web of "weed-free" marketing jargon and quick-fix chemicals? Do we believe that if our pre-emergent treatment is not effective, we will simply kill the weeds with the post-emergent?

The reality is that—if we don't apply the pre-emergent on schedule, in accordance with the label, getting complete coverage of the area, and if we do not follow correct cultural practices—we will have an uphill battle.

We apply substance to the turf, but the customer is neither satisfied nor dissatisfied based on what we put down. They are satisfied or dissatisfied based on the *result*. The service is almost completely intangible. We are promising a result, and customers do not know whether they are being well-served until they get or do not get what they were promised.

If we allow the existence of weeds to become the evidence of our non-performance, we have stepped into our own trap. **LM**



Phil Christian III of Alpharetta, Ga. is a consultant with All-Green Management Associates in Columbus, Ohio. He is a frequent speaker at turf conventions.

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**Lee Martin's responsibilities include maintaining this view of the Japanese garden at the Carter Presidential Center.**

# LANDSCAPE MANAGER OF THE YEAR

Morris Lee Martin of Alfred L. Simpson & Co. believes education, higher pay scales and industry organizations can help solve Atlanta's workforce problems.

When we called to congratulate Lee Martin of Alfred L. Simpson & Co. for winning this year's Landscape Manager of the Year award, a light rain was falling in Atlanta. But rather than sit and watch the grass grow, Martin was entrenched in a weekly staff meeting. At these times, he and the company's other four division managers take care of business and solve the problems that get in the way of award-winning progress.

Martin is vice president of the company's Landscape Maintenance Division. As such, he is responsible for 182 acres of turf, 65 acres of shrubs and 10,000 square feet of bedding plants and floral displays. These include such prestigious clients as the Carter Presidential Center and Library; the Business Center of the Northwoods; and One Atlantic Center, site of the IBM Tower.

## Unparalleled growth

Martin joined Alfred L. Simpson & Co. 15 years ago. The company has since grown from 15 to more than 120 employees. In the last five years, according to operations manager James Brisky, Martin has taken his department's gross sales from $560,000 to $1.35 million. His goal is $3 million.

"He has directed this steady growth," says Brisky, "while improving the department's quality and the percentage of its profits, as well as its reputation in a highly competitive market.

"In addition to the technical care," Brisky notes, "Martin schedules all work, and meets with clients when necessary to insure high quality work and client satisfaction."

Brisky calls Martin a real innovator, and says one of his most important ideas has been in the delegation of day-to-day authority and responsibility to a highly-qualified management team.

"Lee started initiating this structural change around 1981," says Brisky, "and has modified it constantly over the years."

"The people on my staff deserve much of the credit," says Martin.

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*Martin: "Work with people...to create situations where everybody wins."*

**One Atlantic Center is the site of lunchtime crowds and summer concerts, and therefore requires extra care and attention.**

Brisky, Garry Agan, Boyd Russell and all of his 55-person staff "do a lot of things that go beyond the call of duty, and Mr. Simpson is more like a father to me than an employer."

### Branch offices help

Martin has helped to direct company growth by adding and reorganizing resources to meet the department's changing needs while keeping work quality high.

"Over the past few years, we had problems in getting our manpower from one side of the city to another," explains Martin. "We elected to evaluate the expense of having two satellite offices. We then started to get in-house jobs like the Carter Center and Northwoods. Now, our area supervisors are a few minutes away from a job. The fast response time makes us more efficient, and there is less wear and tear on the trucks, less field costs."

**Martin believes the employee shortage can be intercepted with a three-pronged attack of horticulture education in high schools, higher pay scales and continued involvement of industry organizations.**

Martin believes the industry's employee shortage—which many predict as inevitable—can be intercepted with a three-pronged attack consisting of education in horticulture in area high schools, higher pay scales and continued involvement from industry organizations, such as ALCA and PGMS, two groups Martin believes have done much for the profession.

"A college eduation is valuable because of the way it molds a person's way of thinking," says Martin. "Trade schools help give people some technical training to build on as well.

"Experience, however, is the most critical part of a landscape manager's background. He needs experience with people: pleasing clients, encouraging employees to motivate themselves and to work together like a team." **LM**

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Runner-up

## KEEPING IT GREEN FOR THE RED, WHITE AND BLUE

Joseph Paul Barefoot, our runner-up for Landscape Manager of the Year, is chief of grounds maintenance and landscaping for the U.S. Soldiers' and Airmen's Home in Washington, D.C. He is responsible for the maintenance of 320 acres, including a new nine-hole golf course.

He also directs both interior and exterior pest control, road and walkway maintenance, transportation around the grounds and vehicle and equipment maintenance.

The 260 acres of landscaped area are divided into two levels of maintenance: 150 acres intensely maintained, 110 nominally maintained.

Barefoot's annual budget is $1.3 million, but periodic budget cutbacks are not uncommon.

For the past five years, Barefoot has conducted a continuing program of landscape improvements in the domiciliary and health care areas. Generally, $25-30,000 is spent for landscape materials.

**The Knot Garden at the U.S. Soldiers' and Airmen's Home.**

"We've created many new perennial beds and replaced vast amounts of overgrown shrubbery," he says. His crews plant 30,000 perennials each year, and follow a replacement program of replanting three trees for each one that is removed.

"A five-acre plant nursery is maintained where we move damaged materials into for recovery purposes," says Barefoot. "The 50,000 square feet of greenhouses are leased to the Smithsonian Institution, where they grow bedding and display plants and maintain collections for research purposes."

Barefoot earned his bachelor of science degree in agriculture from Penn State. He has done master's work at Penn State, Delaware State and Wisconsin State at River Falls.

Active in grounds management for 25 years, Barefoot was national president of the Professional Grounds Management Society in 1972-73. He has also served as vice president and president of the Mid-Atlantic Association of Golf Course Superintendents.

*—Terry McIver*□

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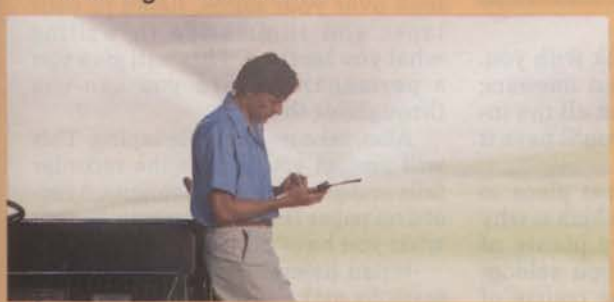

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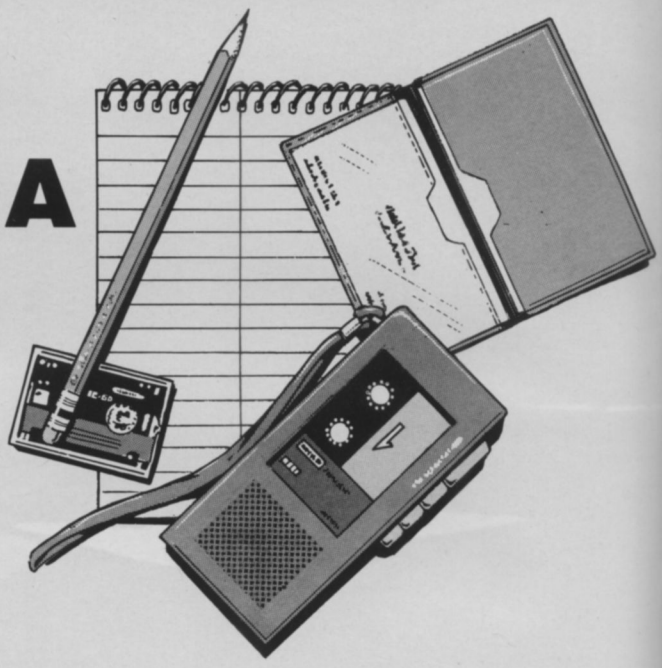
# GETTING THE MOST OUT OF A TRADE SHOW



Trade shows have evolved from an excuse to party into essential business gatherings. By carefully planning your shows, you'll get more out of them.

*by Rudd McGary, Ph.D.*

The trade show season—October through March—is upon the green industry. And in order to get the most out of the trade show experience, it's important to remember to take steps before, during, and after each show.

The day is gone when a trade show was simply an excuse to socialize. With today's increased competition, government regulations and consumer "chemophobia," you need the information available at trade shows if you're to continue your personal growth in the industry.

Break down your show responsibilities into two parts: preparing for the trip and following through at the convention site.

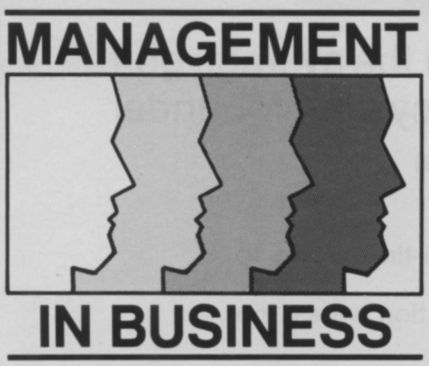
### Preparation

Usually you'll receive the trade show program soon after mailing your registration fee. Take time to read the program thoroughly, or you'll end up wasting a great deal of time at the show. Send for a show brochure even if you plan to register on site.

The program lists names of the vendors and time and location of the educational programs and social activities. Look for educational topics and vendors that interest you. If you aren't sure what a topic entails, call the association offices for an explanation before committing your time and energy to attending.

Outline a plan that will allow you to conveniently visit all the vendors you wish to see. This is a great opportunity to gather information on their wares, particularly if they're showing new products. It's a good idea to bring with you a list of questions for the vendor so your visit doesn't turn into simply a social meeting. (It's not bad to have social meetings, but if that's all you do at a show it's not a good way to use your time.)

Rudd McGary, Ph.D., is a senior consultant with All-Green Management Associates, Columbus, Ohio.




Always have a notebook with you. Write down questions and answers; that way you're sure to get all the information you need and you'll have it for future reference.

Trade shows are a great place to make business contacts, which is why you should always carry plenty of business cards. Even if you seldom use business cards in the course of your daily business, they are very handy at a show—particularly a national show. If you want a vendor to send you additional information or want to make sure another attendee knows how to reach you, a business card is invaluable.

### At the show

Get your show credentials as soon as you arrive. The programs and a listing of all the functions will usually be issued with your credentials.

Next, make out a schedule of the events you want to attend and/or vendors you want to see. Keep in mind that you're likely to make last minute changes and adjust your schedule accordingly.

Divide the show days between attending the educational sessions and visiting vendors on the trade show floor.

Your notebook will come in handy at the educational sessions. Most speakers don't mind if you record their speech on a cassette, but it's a good idea to ask first. A quick thought about tape recording: people often make tapes of sessions and then never listen to them again, particularly if there are multiple sessions in one day. When the show is over and you're back in your office, look over your notes, listen to your tapes and summarize in writing what you learned. This will give you a permanent record you can use throughout the year.

Also, take notes while taping. This will protect you in case the recorder fails and give you a permananent record on paper that you can supplement what you have on tape.

When listening to the educational sessions make sure you consider the information as it relates to your company. In some instances, specific information might not pertain to your company. But for the most part you should be able to use the information in some form or another. If you can't, you're wasting time by sitting in on the session.

### Ask questions

If you don't understand what is being said or the presentation is unclear, ask questions. If there isn't enough time

for the speaker to answer your questions or if you don't want to interrupt, make a note of your questions and ask them after the session.

Unless the speaker's topic is how to read minds, he or she won't be able to answer all your questions in advance. Usually it's best to ask specific questions after the session so that you don't take time away from the speaker. Corner the speaker later if necessary. If you don't leave the room with the information you were hoping for, it's because you didn't ask enough questions.

As with the educational sessions, planning your tour of the trade show floor is helpful. Circle the booth locations of the those vendors you want to see. Don't go at them helter-skelter.

Plan your visits around the educational sessions. In some cases the show is designed so that educational sessions are at different times than the trade show, though some shows schedule them concurrently. Knowing booth locations and the hours you can visit them will allow you to make better use of your time.

As you go through the show, you will find that your information falls into several categories. From the sessions, you will have technical, product, regulatory and business information. It makes some sense to have your note-taking arranged so that you can record information within each of these categories.

Informal meetings are also excellent opportunities to obtain information. There is no need to "pump" people for ideas during social occasions, but you should have some idea of what you intend to learn, even at these informal meetings. Often the information you pick up here is as valuable as that from the trade show or educational sessions.

If you attend the show with a coworker, it's important to decide beforehand which of you has the responsibility to find out certain information. That way you won't waste time by looking for the same things.

### Plan to plan

Remember this simple rhyme: *Plan before you go; then plan again at the show.* By doing this you'll increase the likelihood of seeing something or someone that can be helpful to you or your company. If you don't plan ahead, you'll miss the chance to take full advantage of the benefits of attending a trade show.

At the end of a show make a note of the things you enjoyed and the things you're going to avoid next time. This will help you make the next show even better than the last one! **LM**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Circle No. 109 on Reader Inquiry Card

# Training is best way to reduce liability risk

*by Jim Leatzow*

A great deal of confusion exists concerning possible insurance implications from using chemicals and even fertilizers. Essentially, three separate potential exposures are created by applying chemicals.

The first exposure is one that requires you to be covered by professional liability insurance. If plant material dies or is damaged after an employee sprays it, the only insurance available to pay for such a loss would be professional liability. However, since such coverage is generally not available, we can say with certainty that you virtually have no protection whatsoever.

Certain safeguards need to be in place in your operations to make sure this kind of uninsured claim never occurs. Probably the largest exposure exists from combining chemicals in tanks that haven't been thoroughly washed and rinsed. The combined effects of multiple chemicals can result in a potentially harmful product that may injure plant material.

Also, segregate chemicals to eliminate confusion about which is to be used. Both measures will help reduce the chances of a mistake being made in your shop.

### Have written procedures

It is very important for your operation to have written procedures that are known by your employees. The procedures should always include the routine maintenance plans to be performed on your tanks and storage units to prevent the unintended chemical mixing.

The next area of concern involves spray drift. This could occur if you're using a systemic, broad-spectrum herbicide that drifts and damages or kills plants that are not the object of your work. Coverage for this exposure can be obtained, but it often requires a special endorsement that broadens the "property damage liability" portion of your general liability insurance.

Because this specific area has the potential for sizable claims, some insurance companies are reluctant to provide this broadened protection. It is imperative for you to talk with your insurance broker directly in order to help him or her understand your concerns and find a way of alleviating such risks. If your broker is not knowledgeable about your industry and your specific insurance needs, it might be prudent to obtain some competitive quotations at your next policy anniversary.

### Claiming pollution

The third potential area of insurance exposure involves pollution. The courts continue to broaden their position on pollution liability, which often results in ridiculous awards. The insurance industry has responded by dramatically restricting the coverages available that fall under the loose heading of "pollution."

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policies available today basically exclude all pollution, regardless of the source. In our current competitive marketplace, some companies have begun to broaden their definitions ever so slightly, but the real impact is that insurance companies are not interested in providing exclusive pollution coverage. The financial risk is simply too great.

There are several insurance companies available that write these difficult classes of business on a specialty basis, but they involve very significant minimum premiums (possibly $25,000) which make them far too expensive for the average small business.

The largest litigation calamity that appears to be brewing concerns groundwater contamination. This falls under the pollution heading and is seen in the insurance industry as a potential disaster. While more attention is being focused on the millions of tons of toxic waste that has been buried or merely discarded by errant parties across the United States, legal challenges are also being mounted against sprayers and applicators. These challenges are an attempt to prove that the products being applied in the green industry are the real culprits in tainting groundwater.

### Setting up defense

The bottom line is that you can be assured of no protection, and the best way to keep yourself out of trouble is to have frequent dialogue and written communication with the Environmental Protection Agency at the state and federal level. Make sure the EPA has approved all products used by your firm.

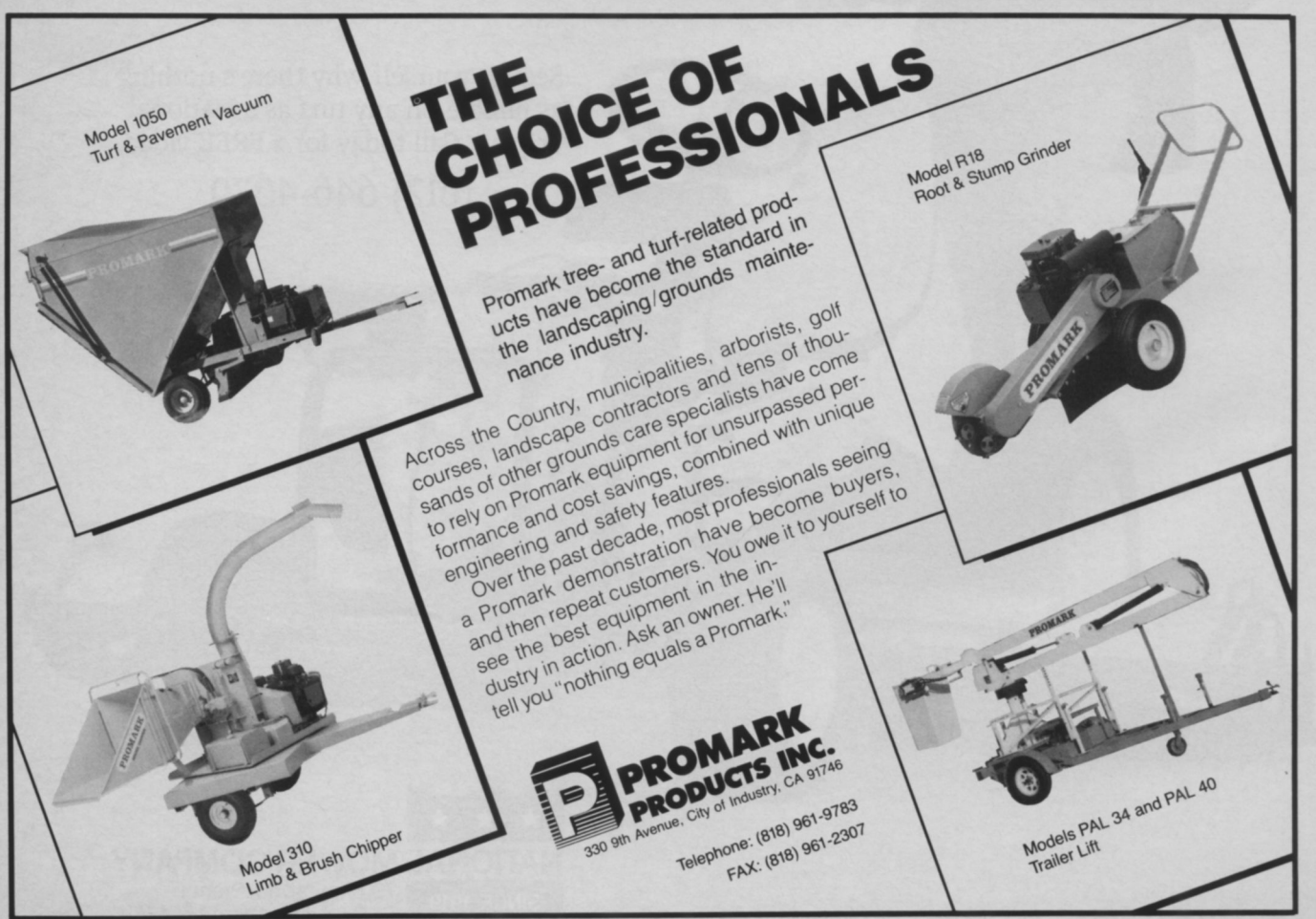
*The largest litigation calamity that appears to be brewing is groundwater contamination. Such a claim is seen as a potential disaster.*

Be sure to document your attempts to prove that the products you are using are safe and are being applied safely. By not doing so you may be leaving your company wide open to a claim that can ultimately bankrupt it.

Since two out of three insurance exposures discussed above are virtually uninsurable, it is imperative that you continually update your in-house safety and documentation procedures. You cannot increase the awareness of your staff enough, since a mistake could lead to a large, uninsured claim. For those areas covered by insurance, you need to align yourself with a knowledgeable insurance broker familiar with the green industry.

There is no substitute for these precautions. Unfortunately, many people don't realize that until a large claim has occured. By examining your needs now, you take a major step toward avoiding these kinds of costly problems. **LM**

James Leatzow is president of Leatzow & Associates, Glen Ellyn, Ill. He specializes in green industry matters.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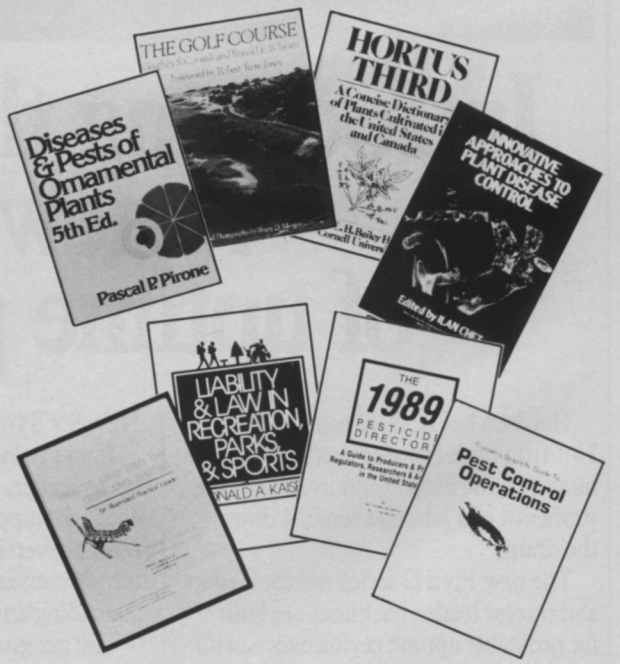
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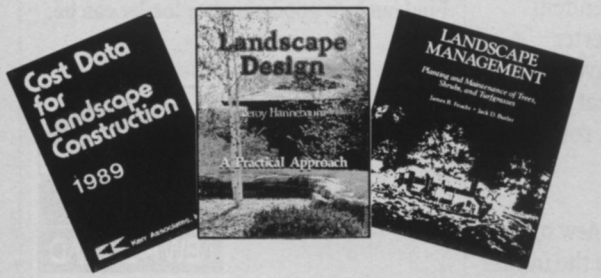


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When the City of Charlotte decided to convert a landfill site into an 18-hole community golf course, its primary problem was how to stabilize the uneven surface of the landfill into a smooth, well-drained surface for tees and greens.

Moreover, a solution was needed to prevent the landfill from sinking and its contents from pumping up to the surface.

Designers selected heavy-duty geotextiles to solve these problems. Installed over landfill content and fill, geotextiles provide a separating layer between these elements and the top layers of the fill and soil. Additionally, they reinforce and stabilize the uneven content of the fill by spreading the load from above and save contractors money because considerably less fill is needed.

### The installation

The first step in preparing the course was to place at least 12 inches of soil on top of the landfill material. Even so, it was anticipated that the subsurface might be unstable in some locations.

Since it was particularly critical that the tees and greens be solidly based, 8 oz.-per-square-yard Supac fabric was unrolled in tee and green locations on top of the backfill material. In addition to reinforcing and stabilizing the subsurface, Supac also acts as a filtering agent.

The fabric was overlapped 12 to 18 inches at the edges and end of each roll and shovelfuls of earth were deposited along the edges and randomly across the width of the fabric to prevent the wind from lifting it. Then approximately six inches of backfill was bladed onto the geotextile.

### Before seeding...

Next, six inches of backfill were placed on top of the geotextile, followed by a 20-inch polyethylene sheet, a further six inches of fill, and finally six inches of topsoil prior to planting grass seed.

Supac geotextiles are manufactured by Phillips Fibers Corp. (Greenville, S.C.) with 100 percent manmade fibers that are mechanically interlocked.

Manufactured from polypropylene, a petrochemical-based polymer, Supac geotextiles are chemically and biologically inert. Supac will not decompose in soil due to bacterial or fungal action. It is unaffected by acids, alkalies, oils and most chemical solvents.

Geotextiles are also being used to line several ponds on the golf course and as sedimentation control barriers. They enjoy widespread acceptance in a wide range of civil engineering projects, including reinforcement, stabilization, drainage and erosion control. **LM**

**About six inches of backfill was bladed onto the geotextile, spread in the direction of it overlap to keep the fabric from separating.**

## Matting improves playground surface

The Chicago Park District is using a unique-looking black nylon geomatrix matting underneath playground surfaces to improve drainage and help provide a safer, more consistent playing surface for kids.

The compression-resistant, three-dimensional matting and wood chips are being used to replace sand playing surfaces and on playgrounds with asphalt surfaces. The matting, called Enkadrain, is manufactured by Akzo Industrial Systems, and distributed by American Excelsior Company.

### Problems with sand

The sand-based playground design presented several problems: sand clogs drainage systems, children constantly moving it around creating an uneven playing surface, and the children unwittingly carrying it home in pockets, shoes and pants cuffs.

In some Chicago playgrounds, children's play apparatus stood on asphalt surfaces, which made for a hard landing surface that caused cuts and bruises.

The matting, which comes with a filter cloth on one side, was placed directly onto the existing asphalt paving with the fabric side up. Eighteen inches of fire-resistant, vermin-proof wood chips were placed on top of the matting, which was stapled to the inside of 18-inch-tall timber retaining walls that formed a boundary of the playing area.

The matting, which is available in 0.4- and 0.8-inch thicknesses, resembles a tangle of heavy black nylon fishing line. Its open, three-dimensional nature allows rain water to seep through the wood chips, which are kept out of the matting by the fabric, and into the drainage system.

### Other applications

Enkadrain has also been used for highway shoulder drainage and as a drainage medium in commercial and residential planters. Its primary use has been for drainage against subsurface walls where it relieves hydrostatic pressure and helps keep basements dry. □

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**GROUNDS MAINTENANCE TRACTORS**

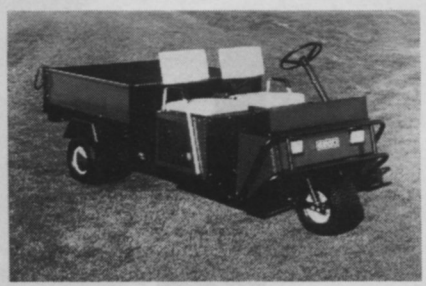
Circle No. 105 on Reader Inquiry Card

# PRODUCTS

## Two extra horses power this new utility vehicle

E-Z-Go Textron's latest utility vehicle, the GXT-1500, features a 20 hp, twin-cylinder Onan engine. Previous models contained an 18 hp engine.

E-Z-Go says the GXT-1500 is the only vehicle of this kind with an automotive-type, fully synchronized 5-speed transmission. The transmission eliminates the need for a range changer and provides even shifting



for the best available gear combinations in any situation.

The GXT-1500 has a payload capacity of 1500 lbs. It has diamond-plated, Polane-topcoated steel panels and a welded tubular steel frame. The 19-cubic foot load bed measures 52″ x 54″ x 12″, with removable sides and tailgate for easy loading.

**Circle No. 201 on Reader Inquiry Card**

## Economical vehicle carries its weight and then some

The GT-1 turf vehicle from Cushman is powered by an economical 8 hp gasoline air-cooled engine. The vehicle features a fully automatic torque converter with automotive-type differential that transfers more engine power to the drive wheels for more lugging power. The 4-cycle engine burns regular gas, eliminating the need for oil-gas mixtures.

The GT-1 has an outside clearance circle of 19.5 feet. Cushman reports it has enough maneuverability for just about any type of grounds work, from golf courses to nurseries to campgrounds. The cargo box measures 44″ x 40″ x 8″, and holds up to 8 cubic feet and 1,000 lbs. of payload.

A manual dump bed option is also available for easy unloading. With the additional option of the folding steel tailgate and loading ramp, one person can load and transport smaller equipment.

**Circle No. 202 on Reader Inquiry Card**

## Easy maneuvering along with sturdy endurance

A utility vehicle for the turf industry that incorporates the pure work characteristics of a rugged cargo carrier with both the maneuverability and ease of use of a Yamaha four-wheeler has been introduced by the Pro-4 division of Yamaha Motor Corporation, U.S.A.

The Pro-Hauler features turf tires specifically designed to protect delicate or expensive turf from unnecessary damage. It has a cargo capacity of more than 400 pounds that

allows it to perform a majority of the routine hauling jobs tackled by landscapers, caretakers and superintendents.

The Pro Hauler has been engineered with special low-speed gear-

ing to make it most effective for the type of work traditionally done in the turf industry, says Yamaha. Yamaha also is making available an optional set of stake sides to further enhance the versatility and usefulness of the vehicle. Another optional accessory feature is an hour meter that keeps track of how long the vehicle has been in operation so that maintenance can be performed on a timely basis.

**Circle No. 203 on Reader Inquiry Card**

## Take your pick from these heavy-duty utility vehicles

Club Car, Inc. offers two utility vehicles to choose from, based on your workload requirements. They are the Carryall I and Carryall II, and are distinguished largely by the size of the pickup bed.

The Carryall I is a down-sized version of Carryall II and is available in gasoline and electric models. The Carryall II is gas-powered only, and has the larger pickup bed area.

The Carryall I has a clearance cir-

cle of 17'6"; clearance circle for the Carryall II is 20'8".

Both cars have an all-aluminum frame, chassis, rear body and pick-up bed. Thermoset polymer front cowl, integrated front bumper and side rub rails, flange-sealed inner fenders to protect the battery and engine compartment are also standard.

**Circle No. 204 on Reader Inquiry Card**

## Get two extra wheels with this good-looking vehicle

The Big Boss from Polaris is a six-wheel utility vehicle with four-wheel drive.

Polaris describes the Big Boss as part pick-up/dump truck/cargo carrier, as well as a leisure vehicle.

Front suspension for the Big Boss is by MacPherson struts with 6.26 inches.

Dual shocks on the rear supply 5.25 inches of suspension travel.

Cargo capacity is 6.4 cubic feet in standard form, 13.68 cubic feet with stake box sides.

A Fuji 244cc two-stroke single cylinder motor provides the power.

The front wheels have dual hydraulic disc brakes. The rear braking is by a triple hydraulic disc system.

The vehicle meets or exceeds all

One way to keep your sprinklers from watering in the rain is to stay out there with them.

The far better way is to use the Mini-Clik II, the best-selling rain sensor in the world.

It shuts off your sprinklers during rainfall. And keeps them off until grass and shrubs are thirsty again. Without disturbing your system's automatic controller. So instead of sprinkling your money away, you save it on a rainy day.

Only Mini-Clik measures rainfall through moisture-absorbing disks. They absorb water and dry out the same way turf does.

Other rain sensors rely on collection cups. But cups collect leaves and debris. The cost of servicing them will more than pay for Mini-Clik.

What's more, the patented design is so reliable, Mini-Clik is guaranteed to work. Because it's simple, from the way it's installed to the way you click in the precise settings.

For more information and the name of the distributor nearest you, just call Glen-Hilton Products at **1-800-476-0260.** To find a better rain sensor, you'd have to take the job yourself.

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Circle No. 111 on Reader Inquiry Card

American National Standards Institute criteria for its category.

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## Mighty vehicle equipped for a variety of uses

Mitsubishi's Mighty Mits line of industrial vehicles is equipped to

handle a variety of work assignments. Golf course and park maintenance, groundskeeping, facilities management and maintenance applications can all be serviced by Mighty Mits.

The line features a raised roof for more headroom than similar multipurpose vehicles designed for use off public roads.

The Mighty Mits come in full cab models equipped with either sidebars or doors, Flo-Thru and Tilt-Bed models, with two- or four-wheel drive options. Maximum payload capacity is 1,750 lbs.

**Circle No. 206 on Reader Inquiry Card**

## Quarter-ton loads easy for Kawasaki vehicle

The Kawasaki Mule 1000 hauls quarter-ton loads in the bed and two people up front. It goes anywhere, thanks to a low center of gravity, independent suspension and off-road tires.

The Mule is powered by a 454cc, four-stroke, liquid-cooled Kawasaki engine. A dual-mode differential is optional. With the flip of a lever, the operator can lock the differential so both rear wheels turn together for maximum traction. Unlocked, the wheels provide a tighter turning radius and minimal soil disturbance.

**Circle No. 207 on Reader Inquiry Card**

## Five-wheeler offers handlebar controls

The AMT-622 is the newest addition to the John Deere fleet of five-wheel utility vehicles.

The 10 hp transport replaces handlebar controls with a steering wheel, foot accelerator and brake pedal. Dual headlights are standard. Options include tail and brake lights, turn indicators, horn, hour-meter and electro-hydraulic dump.

Four-wheel drive with differential lock provides extra traction in wet ground, and high-floatation tires minimize ground compaction. Variable speed transmission requires little operator training.

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## Growth medium works at half the cost of topsoil

Fairgrow is a safe, natural and nutrient-rich growth medium derived by composting solid waste organics and reclaimed wastewater treatment solids.

Rich in both macro- and micro-nutrients, Fairgrow reduces the need for fertilizer, iron, lime, sulfur and topsoil.

According to the Fairfield Service company of New Castle, Del., Fairgrow is so rich in organic matter and plant nutrients that mixing one part of Fairgrow with two parts of existing subsoil can result in a topsoil of superior quality.

Fairgrow has been composted in a controlled environment at temperatures high enough to destroy weed seeds and damaging plant pathogens. Fairgrow has a pH of about 7.0 to reduce soil acidity.

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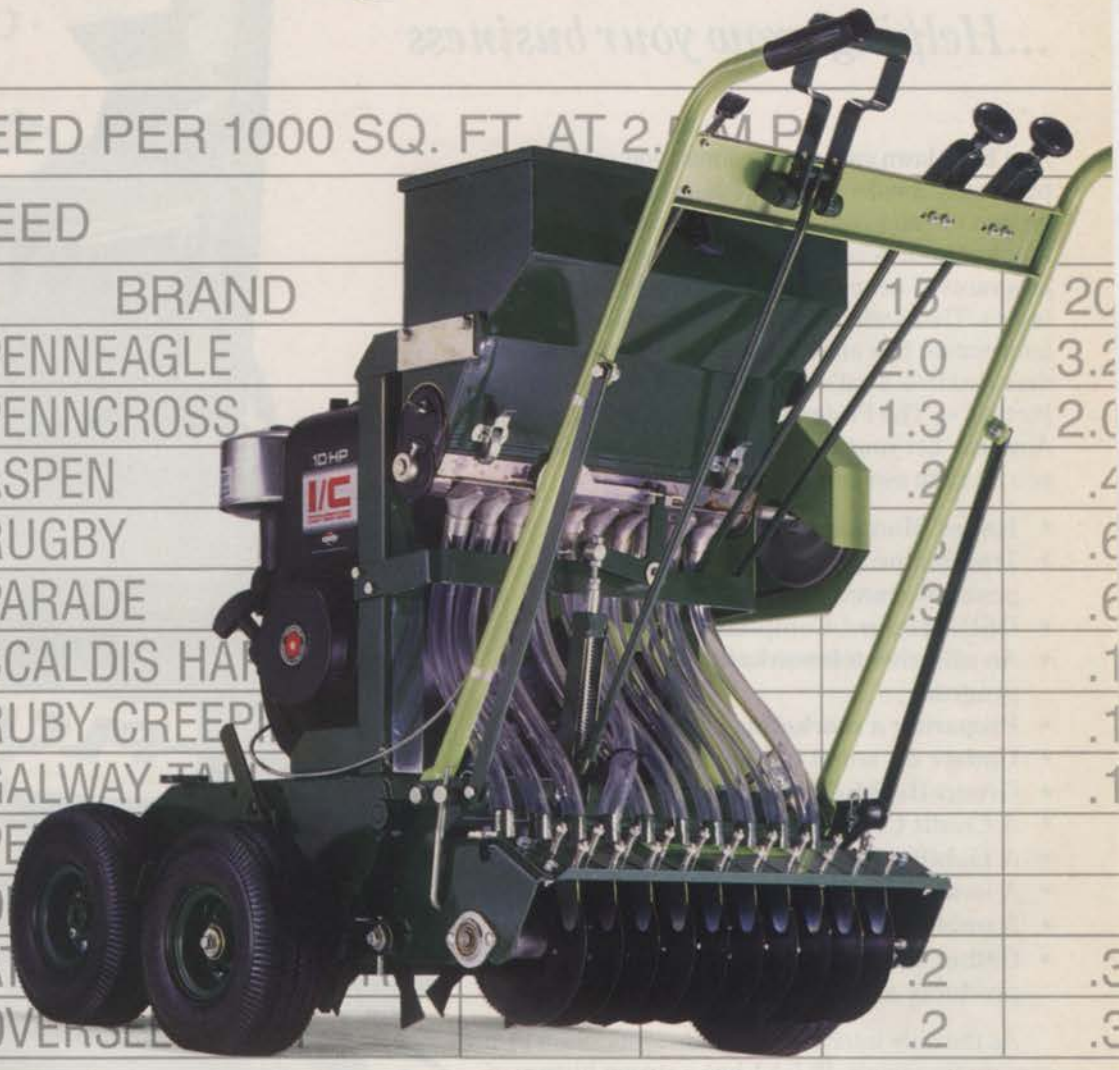


POUNDS OF SEED PER 1000 SQ. FT. AT 2.[illegible] M P[illegible]

| TYPE | SEED BRAND | | | | | |
|---|---|---|---|---|---|---|
| BENTGRASS | PENNEAGLE | | | | 2.0 | 3.2 |
| | PENNCROSS | | | | 1.3 | 2.0 |
| KENTUCKY BLUEGRASS | ASPEN | | | | .2 | .4 |
| | RUGBY | | | | | .6 |
| | PARADE | | | | .3 | .6 |
| FESCUE | SCALDIS HA[illegible] | | | | | .1 |
| | RUBY CREE[illegible] | | | | | .1 |
| | GALWAY TA[illegible] | | | | | .1 |
| RYEGRASS PERENNIAL | PE[illegible] | | | | | |
| | D[illegible] | | | | | |
| MIXTURE | A[illegible] | | | | .2 | .3 |
| | OVERSEE[illegible] | | | | .2 | .3 |

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- **A newsletter on lawn care issues**
- **A public relations program**
- **Gather major suppliers of lawn care products and services**

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**Excellent maneuverability** increases its versatility. Compact design and rear-wheel power steering make the HM-11 more agile and easy to operate. With a compact 70″ transport width, even narrow paths and bridges won't stand in its way.

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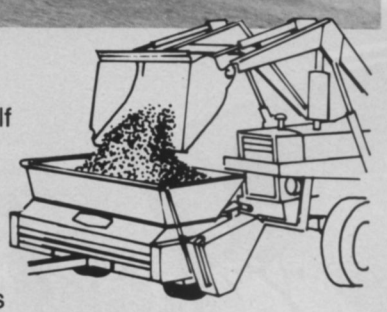

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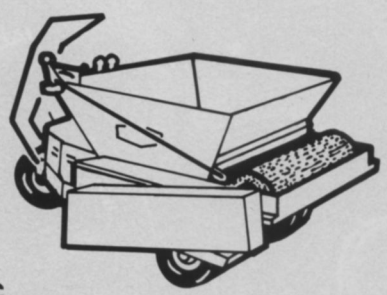

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# PROBLEM MANAGEMENT

by **Balakrishna Rao,** Ph.D.

## Post-emergents for grassy weed

**Problem:** *How can I get control of the summer grassy weed Paspalum plicatulum on cool-season turfgrass? (Spain)*

**Solution:** The *Paspalum plicatulum* grass species to which you are referring is not a common type of paspalum in the United States. Some of the most common species of Paspalum are: bahiagrass (*Paspalum notatum*); bull paspalum (*P. boscianum*); dallisgrass (*P. dilatatum*); field paspalum (*P. laeve*); fringeleaf paspalum (*P. ciliatifolium*); knotgrass (*P. distichum*); and sourgrass (*P. conjugatum*).

The approach that we use to control paspalum that are weeds is to use post-emergent herbicides such as MSMA, DSMA, or Atrazine for selective management. In addition, a good cultural and turfgrass management practice including proper watering, mowing and fertilization will help improve the health and density of desirable turfgrass. As the turfgrass grows aggressively and increases in density, it will be better able to compete with weed species and their establishment.

The other alternative approach is to use a non-selective herbicide such as Roundup to kill all the existing green vegetation and then reseed the area with desirable turfgrass cultivars. The Roundup will manage existing plants with green foliage. However, it will not have any activity on weed seeds or the seeds which may germinate after the treatments have been applied since Roundup doesn't have any soil residual. Therefore, prior to reseeding, it is a good idea to wait 10-15 days after the first Roundup application and monitor the area for new weed growth. If found, provide their management before sodding. Read and follow label specifications.

## Measuring abiotic stress

**Problem:** *The ornamental plants in some of our clients' properties look bad. We were unable to find any insect or disease activity. Perhaps it is related to some sort of stress factors. Do you have any suggestions to help improve the health of these plants? (Pennsylvania)*

**Solution:** The problem appears to be related to abiotic stress factors, which are caused by non-living factors such as environmental stress.

In my opinion, one of the most common and serious problems in many landscapes is the exposure of plants to extremes in moisture and/or temperatures.

In many parts of the United States and Canada, we had dry summers for the past two or three years. This can kill fine absorbing roots and affect plant survival. When roots are damaged, the plants begin to decline.

In addition, the mild winters we've had in the past years can adversely affect plants. A good snow cover insulates the plants and roots, protecting them from low temperature injury. Secondly, when the snow melts, the roots would receive moisture.

This year many parts of the country had too much percipitation in the spring. This can further aggravate already stressed tree roots since excess moisture can remove oxygen from the soil and suffocate or drown the root system.

Plants that were recently transplanted are the most severely affected and many are showing various degrees of decline. Even some plants that were planted several years ago are showing poor twig growth, dieback or scorching-type symptoms.

The best thing to do is to keep these plants healthy by proper fertilizing, watering and pest management as needed.

## Insects or disease?

**Problem:** *Every year on oak trees we see whitish powdery growth on the lower surface of the leaves. We also see a number of small, black specks present in this area. Is this caused by mites? What can be sprayed to control this? (Ohio)*

**Solution:** From your description of the symptoms, the problem you are dealing with appears to be caused by a fungus which causes powdery mildew disease. The black structures you have been seeing are probably not mites, but are the fruiting bodies of the fungus which contain fungal spores. There are several different powdery mildew fungi which attack oak. These include *Sphaerotheca lanestris*, the most troublesome mildew producer. Others include *Erisiphe trina, Microsphaeria alni* and *Phyllactinia corylea.*

An application of fungicides like Acti-dione PM, Benlate or Karathane is recommended to manage the powdery mildew disease problems.

It is possible that mites may also be present on the same plant. For detecting mites, shake the leaves over some white paper or cloth. If there are any mites, they will fall and begin to crawl on the white surface. Mites have eight legs while insects have six legs. Mites leave a staining mark on the white surface when crushed. Verify this possibility just to be sure.

If the problem is identified to be due to mites, an application of dormant oil during early spring or an application of miticides such as Kelthane in mid-June and again two to three weeks later should help minimize the problem.

Read and follow label specifications for best results.

**Balakrishna Rao is Manager of Technical Resources for the Davey Tree Co., Kent, Ohio.**

Questions should be mailed to Problem Management, LANDSCAPE MANAGEMENT, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.

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